

The Canadian Architect & Builder

WIRE ROPE



All kinds and sizes
and for all purposes.
Standard and
Lang's Patent Lay

PRICES RIGHT
PROMPT SHIPMENTS

Rope Fittings

Rope Grease

THE B. GREENING WIRE CO., Limited

Hamilton, Ont.

Montreal, Que.

AUTOMATIC HEAT CLOSING FIREPROOF WINDOWS

Built as the Underwriters want them.
Built to withstand the Hottest Fire.
In actual Fires our goods have proven themselves.

Write for Booklet.

A. B. ORMSBY, LIMITED

Factories: Queen & George Sts., TORONTO.
677-9-81 Notre Dame Ave., W., WINNIPEG.
Montreal Agents: Stinson-Reeb Builders' Supply Co., Limited, 188 William St.

TILES MOSAICS
FAIENCE

Craven, Dunnill

& Co., Limited

JACKFIELD, R. S. O., Shropshire

ENAMELS LUSTRES
WALLS

ELEVATORS

For all Purposes. Satisfaction
guaranteed. Write for Prices
and References.

THE PARKIN
ELEVATOR WORKS

HESPELER, ONT.

See Ad. Page 8

Turnbull

The Turnbull Elevator Mfg. Co.

Elevators

TORONTO, ONT.

"MADE IN CANADA"

Bent

Glass

LARGE BENT PLATE GLASS FOR SHOP
FRONTS A SPECIALTY

Made in all
Kinds of
Glass
on Short
Notice

The

Toronto Plate Glass Importing
Company, Limited

(HILL & RUTHERFORD, Managing Directors)

Head Office and Works: Don Speedway

Bending Works: 209-213 Victoria Street, TORONTO

Otis-Fensom
Elevator Co.

Limited

MANUFACTURERS OF

"Otis Standard Elevators"

HEAD OFFICE: TORONTO

TRADERS BANK BUILDING

Montreal Office: 423 St. James St.

Winnipeg Office: McRea Block, Cor. King and James Sts.

Fine Canadian Marbles

FOR EXTERIOR AND INTERIOR WORK

Complete Plant for Supplying Marble in Any Form Required by the Trade.

Rough Blocks, Cut Building Stone, Monuments, Stair
Treads, Floor Tiles, Etc. Slabs—Polished and
Unpolished.

The MISSISQUOI MARBLE COMPANY, LIMITED

James T. Shearer,
President.

R. J. Dale,
Vice-President.

Henry Brown,
Resident Manager, Philipsburg.

Henry Timmis,
Sec-Treas., Coristine Bldg., Montreal.

Quarries and Mill at Philipsburg, Que.

DAVID MCGILL, Sales Agent at MONTREAL. - TELEPHONE: Main 1200

LEEDS FIRECLAY COMPANY, Limited

EADIE-DOUGLAS COMPANY

22 ST. JOHN STREET, MONTREAL

CANADIAN AGENTS

ENAMELED BRICKS

During 1906 our importations of Enameled
Bricks Exceeded three hundred thousand.

Every Brick Guaranteed

QUEBEC OFFICE,
Bank of Hochelaga Building.

TORONTO OFFICE,
43 Victoria Street

OTTAWA OFFICE,
9 O'Connor Street.

ALBERT MANUFACTURING COMPANY

Manufacturers of

Patent

Rock Wall Plaster

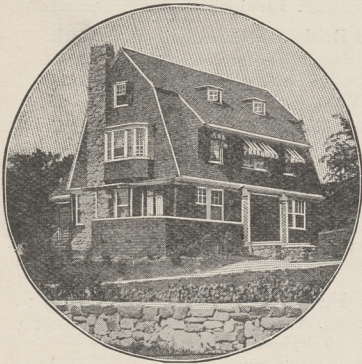


Manufacturers of

"Hammer Brand"

Calcined Plaster

HILLSBOROUGH, N. B., CANADA

CABOT'S CREOSOTE SHINGLE STAIN

Clark & Russell, Architects, Boston, Mass.

The Original and Standard Shingle-stains. Used and proved in every climate for over twenty years. Every gallon guaranteed.

**Sheathing & Deafening
"Quilt"**

The most efficient and only scientific sheathing and deafening. Proved superior to all other deafeners in Prof. Norton's tests.

Send for circulars and full information, Samuel Cabot, (Inc.), Sole Manuf'rs, Boston, Mass.

Canadian Agents: Andrew Muirhead, Toronto; Seymour & Co., Montreal; Arthur Laurent, Quebec; C. G. Henshaw & Co., Vancouver; F. H. Brydges & Son, Winnipeg; E. D. Adams, Halifax; W. H. Thorne & Co., St. John; Central Commercial Co, Regina.

HOLBROOK & MOLLINGTON
 ARCHITECTURAL SCULPTORS, MODELLERS,
 WOOD CARVERS, ETC.

Dealers in Maw & Co's and Minton & Co's Artistic and Plain Tiles for Cabinet Hearths, Floors, Etc.

206 King St., West

Telephone Main 3761

TORONTO

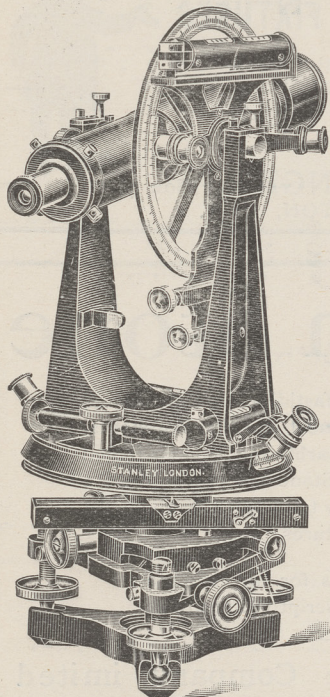
HARDWOOD End Matched, Bored,
FLOORING Polished and Bundled

SIEMON BROS., Limited

WIARTON, ONT.

Office: 82 Confederation Life Bldg., TORONTO

Our Prices will Interest You

STANLEY LONDON

6-inch Tacheometer with bubble on verniers.

LARGEST MANUFACTURES

OF

**Drawing and
Surveying
Instruments**

IN THE WORLD

Please send for H 66 Catalogue (post and duty free,) and compare our Prices with those of other first-class instruments.

W. F. Stanley & Co. Limited

Great Turnstile, Holborn - London, W. C.
 Show Rooms: 286 High Holborn, W.C.

ENAMELED BRICK

FOR EXTERIOR AND INTERIOR DECORATING
 AND CONSTRUCTION

Used in all modern buildings where the maximum amount of light and sanitary conditions are essential

List of Contracts Furnished in Canada**PUBLIC BUILDINGS**

Bank of Montreal, Montreal.....	150,000
Royal Victoria Hospital, Montreal.....	20,000
Banque de Hochelaga, Montreal.....	2,000
Henry Birk's Jewelry Store and Office building, Montreal, (second quality).....	11,000
Sovereign Bank, Montreal.....	20,000
Berkeley Street Fire Hall, Toronto.....	2,500

POWER HOUSE

Montreal Street Railway Power House.....	17,000
--	--------

PRIVATE STABLES

F. W. Molson, Montreal.....	8,000
C. R. Hosmer, Montreal.....	10,000

MISCELLANEOUS

Plymouth Cordage Company, Welland, Ont.....	20,000
Canadian Copper Company, Copper Cliff, Ont.....	1,500
Christie-Brown Company, Toronto, Ont.....	8,000
Montreal Athletic Association, Plunge Bath.....	5,000
Consumers Gas Company, Toronto.....	10,000

Send for Catalogues and Color Sheets

American Enameled Brick & Tile Co.

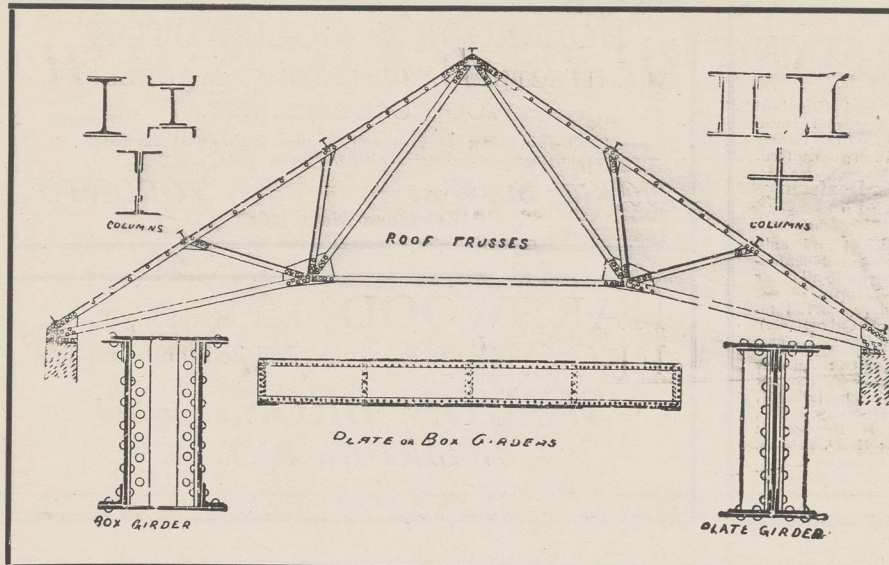
Metropolitan Building, New York

Local Agents in Montreal, Toronto and Ottawa.

Vault Doors and Safes

J. & J. TAYLOR Toronto Safe Works, **TORONTO**

Established 1855



Dominion Bridge Co. Limited

We build Bridges of all designs in both iron and steel; Roofs, Telephone Poles, House Girders and all kinds of Structural Iron Work.

Our stock in hand comprises Steel Beams, Angles, Tees, Channels, Plates, Rolled Edged Flats, Bars, Rivets, Rounds, &c.; Iron Beams, Bars, Squares, Turnbuckles, Rivets, &c.

ESTIMATES FURNISHED FOR STRUCTURAL IRON WORK DELIVERED AT BUILDING OR ERECTED.

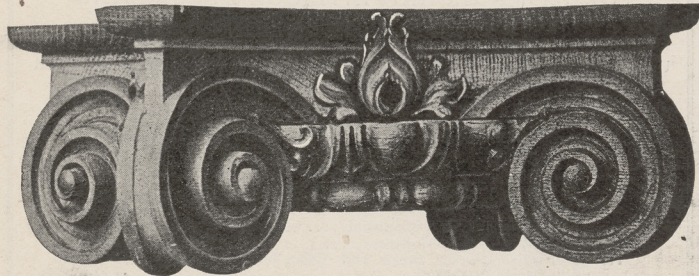
GEORGE E. EVANS, Ontario Agency:
ROOM 38 CANADA LIFE BUILDING, TORONTO
Telephone Main 2164

Post Office Address:
Dominion Bridge Co., Limited, Montreal, Que
Works at Lachine Locks, P. Q.

McCormack & Carroll

Phone Main 2037

82 Adelaide Street E., TORONTO



Manufacturers' Compo Ornaments and Canadian Representatives
Ornamental Product Co., Detroit, Mich.

WRITE FOR CATALOGUE

Amherst Red Stone Quarry Company

Amherst, N. S.

AMHERST RED STONE

Samples Sent Free

Hardens with Age

Correspondence Requested

JAMES BRODIE & CO.

Quarriers and Manufacturers of

Canadian Quinsy, Ebony and Stanstead Granite

Monumental Building, Curbing, Paving, etc. Rough Stock a Specialty

IBERVILLE, QUE.

BUILDING GRANITE

McIntosh-Gullett Company, Limited

1119 Yonge Street, Toronto

ESTIMATES GIVEN

The Best Line of Stone in the Province

All kinds of Dressed, Dimension, Building and Bridge Stone, Footing, etc. Also all sizes of Crushed Stone for Macadam and Concrete work. Prices on application.

The Horse Shoe Quarry Company, Limited, - St. Mary's, Ont.

HAPPY THOUGHT FOLDING PARTITION FIXTURES

are what you require to ensure positive, uniform and easy motion for all widths and heights of opening.

O. T. SPRINGER, Box 44
BURLINGTON, ONT.



Roman Stone

is specified by the most fastidious Architects and recommended by the most careful Engineers. Made from pure white marble and machine tooled after casting. Roman Stone has proven itself a building material worthy to be used in the finest structures.

Send your plans for an estimate and write for descriptive literature.

The Roman Stone Company, limited

100 Marlborough Avenue, - Toronto

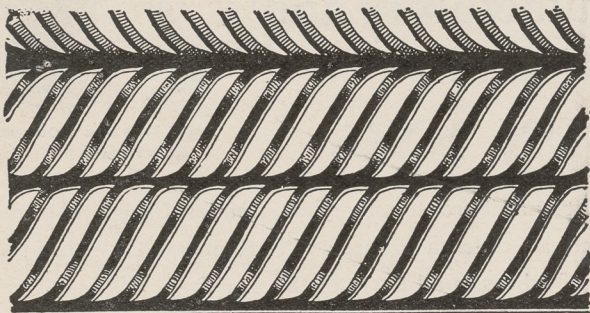
The Miramichi or New Brunswick Light Olive Sand Stone

Also Dark Red New Brunswick Sandstone, any dimensions and finest quality for building purposes from New Brunswick quarries.

SAMPLES AND PRICES ON APPLICATION

William Hood & Sons
10 Richmond Square, - - - - Montreal

DO YOU KNOW THE MERITS OF
CEMENT SIDING ON "HERRINGBONE" LATH?



It allows a greater variety of finish at a lower cost than any other construction. It gets stronger with age. It is vermin proof, weather proof and fire proof.

It solves the housing problem in over-crowded towns and cities, because it is quickly erected, and is **cheaper** than wood.

Send for Full Information and Free Sample
 of "Herringbone" Lath.

The Metal Shingle & Siding Co., Limited

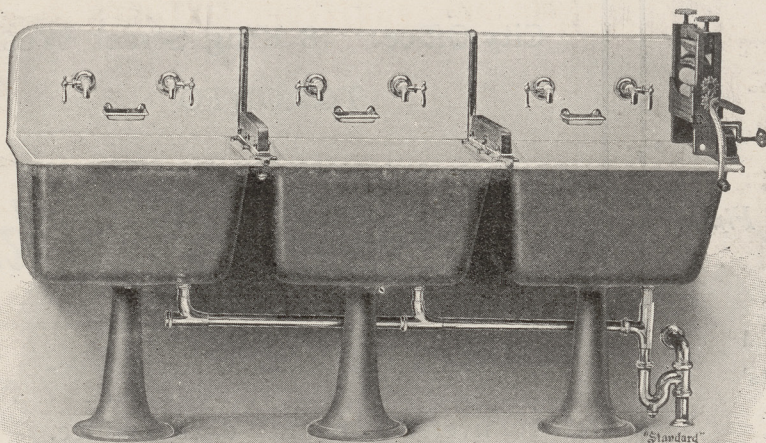
PRESTON

MONTREAL

TORONTO

Clarence W. Noble, 1 Empress Block, Winnipeg,
 Western Agent for "Herringbone Lath"

"Standard" Fixtures *The Houseowner's Choice*



"Standard" PLATE P. 1285 PORCELAIN ENAMELED FLAT RIM LAUNDRY TRAYS, with 12-inch Porcelain Enameled Backs, Nickel-plated Union Strips with hardwood Wringer Holders, Nickel-plated Soap Dishes, Waste Plugs, Couplings and Rubber Stoppers, Nickel-plated Fuller Adjustable Flange Bibbs, Continuous Waste and Vented "S" Trap.

It is always profitable to specify "Standard" Porcelain Enameled Ware for dwelling places of any kind as a majority of houseowners are already prejudiced in its favor. Your client knows that "Standard" Fixtures are indestructible and absolutely sanitary and that, dollar for dollar, they give longer and more satisfactory service than any other plumbing equipment he can buy.

Standard Sanitary Mfg. Co.

Pittsburgh, Pa., U. S. A.

S

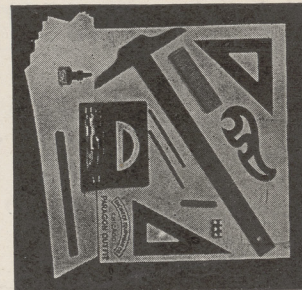
SUCCESSFUL DRAFTSMEN

\$

Drawing \$125 to \$250 monthly require more than Schoolroom Knowledge. As Chief Draftsman of Eng'g firm I know exactly the Quality and Quantity of experience and practical training you must have, and will prepare you in few months home instructions for above paying positions, which I furnish free anywhere.

Complete Highest Grade Drawing Outfit, everything included, with German Silver Set of Tools, value \$13.85, FREE next ten days.

Address, CHIEF DRAFTSMAN, Div. 11, ENG'S EQUIP'T CO., Inc., Chicago.



VALUE, \$13.85
FREE TO MY STUDENTS
 Delivered at once

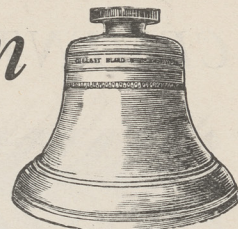


TORONTO CITY HALL CLOCK.

Gillett & Johnston

Clock Manufacturers and
Bell Founders

CROYDON, ENG.

ST. GEORGE'S CHURCH
MONTREAL, BELLS.

Makers of the Clocks and Bells at Toronto City Hall, London Cathedral (Ont.)
St. George's Church, Montreal, Ottawa Houses of Parliament, City Hall Vic-
toria, B.C., and thousands of others in all parts of the world.

TORONTO PRESSED BRICK AND
TERRA COTTA WORKS

Bricks

*Roofing and Flooring Tiles, Cresting, Finials
and Chimney Tops*

Send for Samples and Prices. Special
and prompt attention given to Architects'
Terra Cotta Drawings.

WRITE

TORONTO PRESSED BRICK WORKS

Head Office - MILTON, ONT.

C. J. LEWIS, Proprietor

Montreal Agent: E. F. DARTNELL, 180 St. James Street

Port Credit Brick Co., Ltd.

Telephone Main 3167

City Office: 8 King Street West
TORONTO

*The Best Quality
Full Size
Pressed and Common*

Bricks

Shaped Bricks and Arches de-
livered on 14 days' notice.
Prompt Delivery. Direct Rail-
way to Yard. You are Invited
to Visit the Works at Port
Credit.

HOIDGE MARBLE CO., Ltd., TORONTO

Are now prepared to Manufacture and Install any kind of

Marble, Dados, Wall Panelling Staircase, Floors
and Toilet Room Work

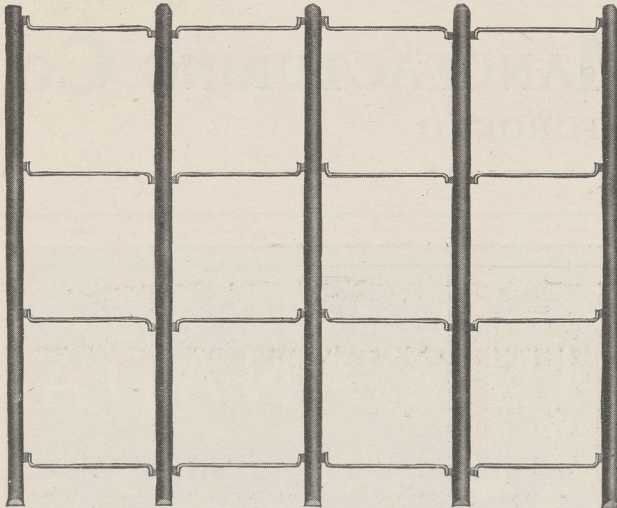
Office: 100 King St., West
Phone Main 5686

Yards: 1117 Yonge Street

KAHN SYSTEM



KAHN TRUSSED BAR

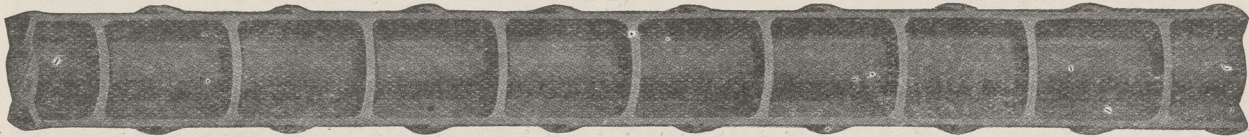
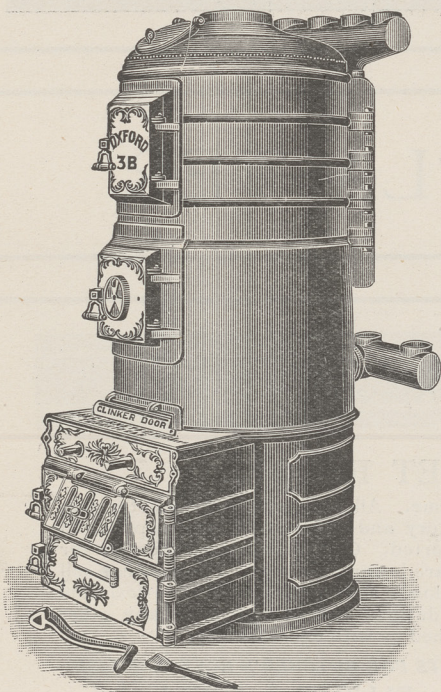


Kahn Rib Metal

The Latest and Most
Approved Form of
Expanded
Metal

Write us
for
Information
23 Jordan
St.,
Toronto
—
Detroit
—
London

Products of the
Trussed Concrete Steel Company of Canada
Limited

Kahn
Cup
Bar

OXFORD Boilers and Radiators

are the result of over sixty years' experience.

Tried—Tested and Proven Unexcelled.

Note the depth of (the heart of the Boiler) the Firepot with diameter, greater at the bottom than at the top, thus preventing accumulation of dead fuel or ashes and assuring increased efficiency.

First Section double the usual depth with bell-shaped flue, opening of grate area *doubling the amount of effective surface immediately over the fire.*

A Grate combining strength, durability and easy operation. A commodious ashpit provided with ash sifter when desired

Radiators of artistic design in all sizes and adaptable to all places. Our "Pocket Companions" give full details, and are for the asking.

THE GURNEY FOUNDRY CO., Limited

Toronto

Hamilton

London

Winnipeg

Vancouver

The Gurney Massey Company, Limited,
Montreal, Que.

The Gurney Standard Metal Company, Limited,
Calgary and Edmonton

TURNBULL ELEVATORS

PASSENGER AND FREIGHT ELEVATORS, ELECTRIC OR HYDRAULIC. ELEVATOR CARS AND ENCLOSURES,
WORM AND SPUR GEAR FACTORY ELEVATORS. ELECTRIC MOTORS AND CONTROLLERS. SINGLE BELT
ELECTRIC ELEVATORS, HAND ELEVATORS, DUMB WAITERS, SIDEWALK HOISTS, CARRIAGE LIFTS,
AUTOMATIC HATCHWAY GATES AND DOORS, WIRE CABLES, ETC.

— THE —

TURNBULL ELEVATOR MANUFACTURING Co.

126-128 JOHN ST., TORONTO

MADE IN CANADA.

THE MOST UP-TO-DATE AND EFFICIENT

GLASS PLANT IN CANADA

OVER 100 CANADIANS EMPLOYED IN

BENDING,
BEVELLING,
SILVERING,
and ORNAMENTING

GLASS

ART,
LEADED,
and ELECTRO
GLAZED GLASS.

BUY RED "S" BRAND WINDOW GLASS

WHOLESALE PRICES TO PAINTERS ON PLATE GLASS AND ALL KINDS OF GLASS

The Largest All-Round Stock of Glass in Canada

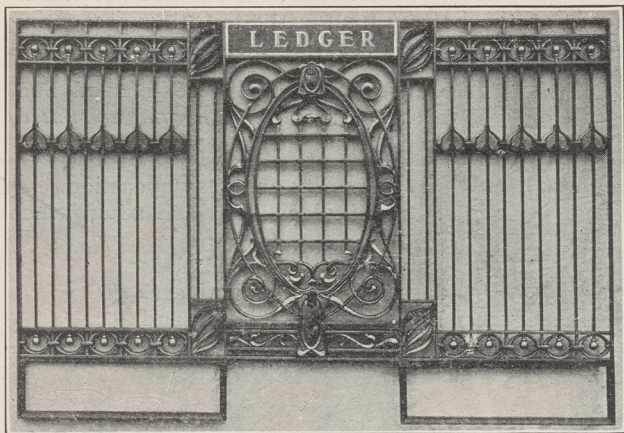
The Toronto Plate Glass Importing Co., Limited

Head Office and Works: DON SPEEDWAY

Bending Works: 209-213 Victoria Street, TORONTO

HILL & RUTHERFORD,
Managing Directors.

USE ROCK WALL PLASTER



METAL GRILLES AND WICKETS

DENNIS WIRE & IRON WORKS CO., Limited
London - Ontario



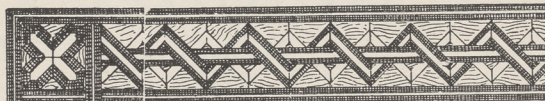
IN PARQUET FLOORS

We are supreme. All our stock is manufactured in our own factory and has proved itself superior to anything imported. Our prices direct from maker to consumer are lower than any other house can sell at. Our catalogue shows about all that is desirable in parquetry designs but we can make any other design furnished us with equal facility.

SOLE AGENTS FOR BUTCHER'S BOSTON POLISH

ELLIOTT & SON, Limited

79 King Street West, Toronto



The Canadian Architect & Builder

A Journal of
Constructive and Decorative Art

PUBLISHED MONTHLY BY

HUGH C. MACLEAN, LIMITED
TORONTO, CANADA.

HEAD OFFICE - Confederation Life Building, TORONTO
Telephone Main 2362

MONTREAL - Telephone Main 2299. B34 Board of Trade
D. BURNSIDE, Representative

WINNIPEG - Telephone 224. 330 Smith St.
ROLAND F. HILL, Representative

VANCOUVER - Telephone 2248. 615 Hastings St.
GEO. A. GALL, Representative

SUBSCRIPTION RATES

Canada and Great Britain	- -	\$2.00
United States and Foreign	- -	2.50

Toronto

FEBRUARY, 1908

Montreal

A SENSATION is engrossing London architectural circles. A young draughtsman, named Ralph Knott, has secured first prize for having submitted the best design for the London County Council's proposed £1,000,000 palace in that city. Mr. Knott, from being the humble assistant in the office of Sir Aston Webb, has attained a reputation which has made him the envy of the profession throughout the United Kingdom. The competition was open to the world. No possibility existed of discrimination against unknown talent. All stood an equal chance. The judges were men little likely to make a mistake in their decision: Mr. Norman Shaw, R.A.; Mr. W. E. Riley, F.R.I.B.A., and Sir Aston Webb, R.A., Mr. Knott's employer. These gentlemen, after careful consultation, placed the work of an unknown and obscure draughtsman above that of such men as Mr. J. Belcher, A.R.A., and president of the Royal Institute of British Architects, who with six other associates and eleven fellows of the same institution, vied for the £40,000 prize, the reward of the successful competitor.

It may be remembered that at the inauguration of the competition for the Hall of the London County Council there was much discussion and adverse criticism, and no little animadversion. Nevertheless, the Royal Institute on the whole subscribed to the conditions laid down. Now that obscurity has eclipsed fame there will doubtless be further discussion of the desirability of competitions in general. There always has been and probably always will be a strongly antagonistic feeling toward the principle of selecting an architect by means of open competition. Nevertheless, it must be admitted that the art of architecture has made considerable progress during the past two or three decades, a fact which may be attributed in no small degree to the popularity of competitions of

one kind or another. The fact that open competition has been the rule is indicative of their value for this purpose and has given rise to the belief that in spite of certain drawbacks, open competitions have made for the improvement of the profession. Mr. Knott's success shows that the younger men are doing their share to advance the profession, principally through opportunities afforded them by competitions. It is not too much to say that some of our most distinguished architects might have been left in obscurity had it not been that they were able to make known their genius by this means.

ALTHOUGH architectural competitions are judged mainly upon the plans submitted, and very properly so, nevertheless, when the issue is in doubt the result may depend eventually upon the accompanying report. It is, consequently, an important document and, while inexperienced competitors are inclined to give comparatively little attention to this matter, leaving it to the last moment to be rushed off by an incompetent typewriter, those who really go in to win and who depend for a considerable proportion of their daily livelihood upon successful competitive work, are particularly careful of their reports. They adopt the precaution of keeping the report in mind from the outset, making notes from time to time of important points which they think should be included in it, altering, re-arranging them and reducing their bulk as circumstances seem to warrant. They realize that an entirely erroneous impression may be gained from the general scheme by a poorly written or badly arranged report, while a carefully thought out description will so forcibly draw attention to advantageous points as to bring them prominently before the assessors so that they may give them due weight—it being quite conceivable that some particularly advantageous point of construction might escape an assessor, however, discriminating he might be.

The primary consideration is therefore perspicuity. Like most writings of the character of an essay, points out "The Building News," in a recent article upon this subject, there should be proper separation into paragraphs, preferably under definite headings, the general principle being followed of having, at any rate, introduction, development and conclusion. In essay writing these several parts are merely kept in mind; but in reports the introduction of marginal notes, such as those used in specification writing, to denote the contents of each paragraph, becomes essential, as well as the grouping of the paragraphs under definite heads. Nothing, it is said, is more fatal to a report than illiteracy, whether it be shown by bad grammar or faulty construction and punctuation. It irritates the assessor if he be a scholarly, and confuses him if he be an unscholarly, man, occasionally even leading to wrong interpretation of the intended meaning.

THE time has again come when the conditions preliminary to another building year call for consideration and, this year, for analysis. At the outset, it may be said, that the outlook, so far as architects are concerned, seems decidedly favorable. Speculators in stocks on margin have suffered during the last three months through a sudden loss in confidence. There has been a general shrinkage in trade that still manifests itself in cancelled orders, but this movement, although it has affected the community in general through an increase in the rates of interest, has not been accompanied by any fundamental disturbance of mercantile or industrial conditions and does not seem likely to have such a result. The future of this country is too well assured and the farmers are too large and influential a class to permit of it receiving a serious setback. When the present uneasiness wears off there will be a notable increase in building operations in all parts of Canada. It is not expected that there can be a great rush of private building this season. That there is going to be the usual amount of higher class residence construction is already assured and architects have on the average as much of this class of work on hand as is usual at this season of year. At the same time there are many large buildings which were not completed last year, and which will be pushed along as soon as weather permits in the spring. These represent a considerable outlay of capital. The outlook for speculative building is, of course, not good. There will be a shrinkage in the inpouring of people to the cities for some time to come that will entail a consequently lessened demand for cheaper dwelling houses. On the other hand, the expenditure on civic undertakings should, and probably will, aggregate more during the coming season than usual. This will be necessary in view of the number of unemployed, who will find much leisure time on their hands should they have to depend solely on the building undertaken by private enterprise. This help, moreover, is largely of a nature fitted only for the roughest of employment, such as sewers, sidewalks and pavements. Such projects municipalities undertake, and the municipalities must see to it that this summer they are begun as early and in as large volume as possible.

AT the first congress of Canadian architects, held in Montreal in August last, when the project of an act for incorporation of the Institute of Architects of Canada came up for adoption, two alternative schemes were discussed. The first contained a clause limiting the use of the word "Architect" to the members of the Institute, the second omitting this clause. The delegates present at the conference were practically unanimous in a desire to adopt project No. 1, which provided for a "closed corporation." Recently the bill has been receiving a preliminary "trimming" from the Private Bills Committee at Ottawa preparatory to its first reading and has been, we understand, denuded of everything that savored of a closed corporation. In short, project No. 2,

which was rejected last August is practically to be the legal basis for the Institute of Architects of Canada. There is now little doubt that the act so modified will be considered by the Government without serious objection, and that the threatened division of the forces of the profession in reference to the objectionable clauses of the act as first proposed will happily not materialize.

AT no previous time in our history has the public welfare received so much attention at the hands of newspaper and magazine writers, public lecturers and sanitarians generally as during the past year or two. In Toronto, above the clamor for "cheap power," is heard the cry for pure water, with its attendant, a more satisfactory sewage system. Already, through the action of the smaller units of county, township and town, acting through boards of health and commissions of various kinds, the death rate of the Dominion has, during the past century, been reduced to an extent scarcely conceivable. Much of this has doubtless been due to the medical fraternity and to scientists who have discovered the causes of a number of preventable diseases, such as smallpox, typhoid and, to a certain extent also, consumption, and by working on the formula that "an ounce of prevention is worth a pound of cure" have greatly lessened the mortality from these diseases formerly so dreaded.

But science has been delayed greatly by the slowness of municipalities to undertake costly improvements for reasons which they can only imperfectly understand. It costs to filter sewage and water, to conduct dairies so that all milk will be absolutely free from disease germs of any kind, to drain swamps and in other ways destroy mosquito pests, to catch and kill plague-bearing rats, to maintain hospitals for contagious disease, to conduct quarantine at the various ports of entry and to exert in other ways the government control which is necessary to compel sanitary precautions by the ignorant and careless and protect the healthy against the diseased. If the detailed cost of this were fully set forth it is possible that many citizens would protest against it as being an expenditure of money bringing no adequate return.

Efforts toward the formation of a National Committee of Health as a part of one of the departments at Washington is beginning to take form, and it is estimated that the properly directed efforts of such a commission, adequately backed by legal powers, may, within a few years, reduce the death rate of that country by 50 per cent. The movement is sure to be copied in Canada, but until a large majority of our citizens are educated to an appreciation of the benefits of sanitation, the efforts of the authorities will be greatly impeded and can be productive of but imperfect results. Education in sanitation is therefore even more necessary at the present time than direct preventive measures and the introduction into our public schools of instruction on such topics is becoming equally as desirable as the teaching of drawing or nature study. The one is certainly complementary of the other.

LEGISLATIVE BUILDINGS, REGINA, SASK.*

E. & W. S. MAXWELL, Architects, Montreal.

Our aim has been to produce a dignified monumental architectural design, that shall express the purpose of the building at a glance, that shall fulfill its usefulness in the most direct manner consistent with economical planning, that shall be adapted in every way to the climatic conditions, that shall provide well lighted and ventilated rooms, corridors and stairways, without resorting to courts, lightshafts or borrowed lights; to this end a rectangular building, with a central corridor on each floor and cross circulating corridors at the central portion provided that due provision is made for the proper lighting of all communications, offers the most economical solution of the problem and the one that is best suited to the extremes of climatic conditions here encountered.

One approaches the building by a driveway off Albert street, skirting the shore of the lake until the Main avenue is reached, being the continuation of Smith street. This leads from the lake shore to the principal entrance. The first impression of this vista, terminated by the central feature of the front elevation crowned with the lofty, spacious and unique dome, is one that will tend to lend and impressiveness to the expanse of dignity, solemnity facade that gradually unfolds as one nears the forecourt.

The main entrance is by a triple doorway, through a spacious vestibule into the main entrance hall, treated in a dignified monumental manner. Directly across the hall is the staircase of honor for the use of the executive and members, leading by two easy flights to the main or legislative floor. Flanking this staircase are four elevators, while adjacent hereto are two staircases for the use of the public.

At each end of the building are provided entrances, stairways and elevators giving access to all floors.

At the head of the Staircase of Honor, which is of spacious proportions, with a lofty vaulted ceiling, one steps into the ante-room of the Legislative Chamber, situated beneath the dome from which it receives its light, and on the major and minor axes of the building. To this room has been assigned an importance second only to that of the Chamber itself, with its monumental treatment, spacious vertical and horizontal vistas. From here the Legislative Chamber is approached by a main central entrance, and by two flanking entrances, thus providing ample circulation during a crowded session. This room has been designed after making a careful study of the principal examples of successful rooms of a like character, and it is believed will fulfill its functions in a manner capable of but slight improvement. An unobstructed view of the Speaker's rostrum from every seat in the house is obtained, as well as from every seat in the public galleries, provided on the three sides of the room. The Speaker's and press galleries are likewise well situated behind and above the speaker and approached by two stairways off the rear corridor.

The question of galleries is usually the "bête noire" of architects in designing a legislative chamber. They

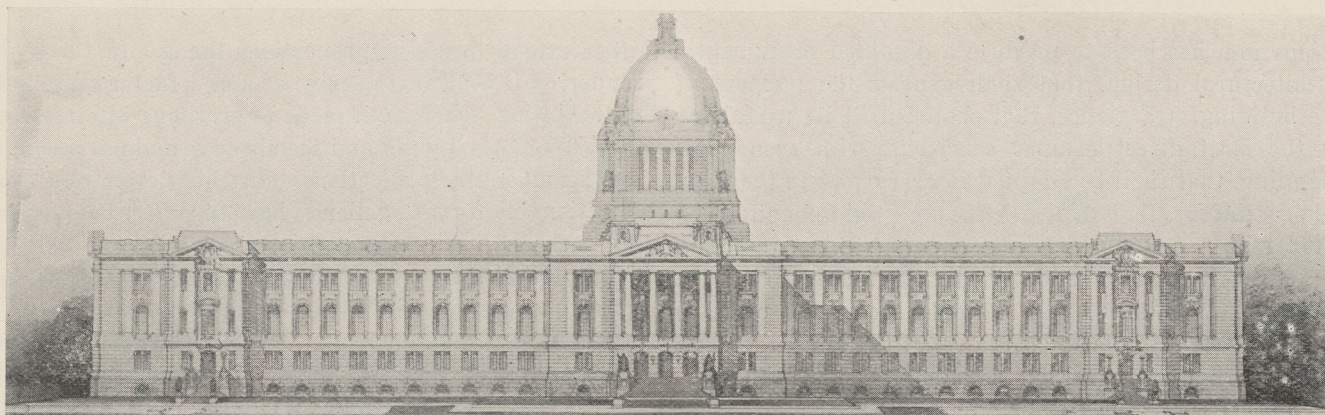
either extend to undue proportions the size of the room, rendering it difficult to arrive at a satisfactory architectural solution; whereas, if made to overhang into the room the view of the public and members is unduly restricted by the unsightly projections. In this design the usual objectionable form of galleries has been overcome by placing each one in a recess specially provided for it in the architectural treatment of the room, unnecessary size and consequent acoustic difficulties being thereby avoided.

It will be noted that from the point at which one enters the building by the main entrance vestibule, hall, staircase of honor and ante-room, a succession of monumental apartments are traversed, all leading directly to the Legislative Chamber, the room above all others for which this building will be erected.

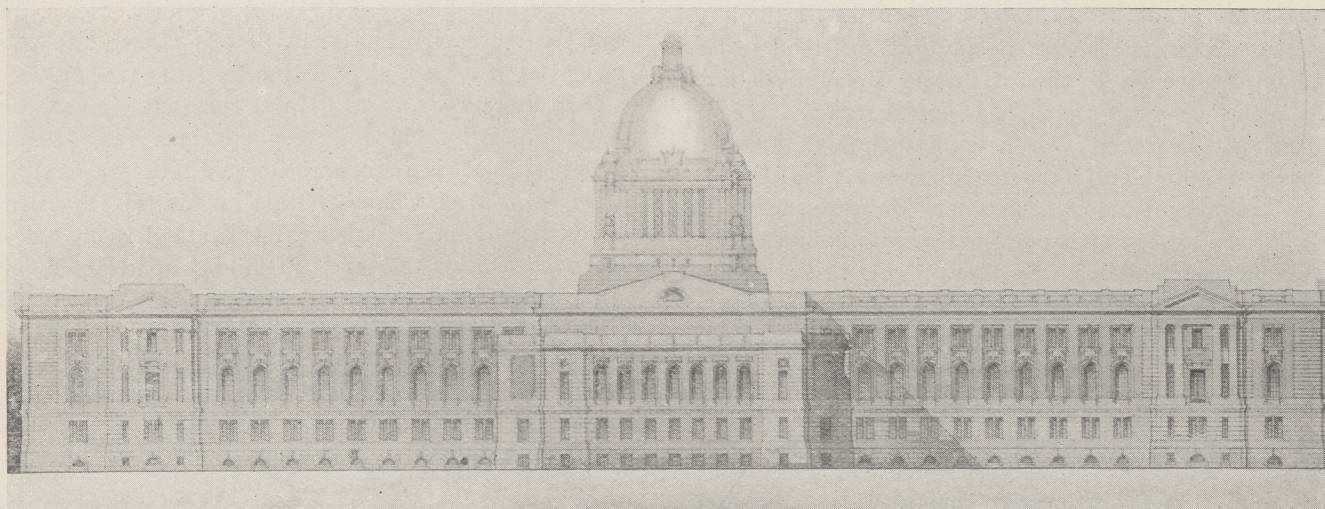
The rooms more immediately in connection with the Chamber are conveniently situated:—The smoking rooms are directly across the corridors at the lateral entrance doors, with toilet rooms nearby. The Speaker's apartments are immediately behind the chamber, with a door from the rostrum. The clerk of the House, the office, sergeant-at-arms, law clerk and mail clerks are here located immediately at hand. In a mezzanine over these apartments is provided a very spacious vault for the storage of records in connection with the transactions of the Legislative Chamber, this in addition to a vault in the office of the Chamber. The Council room and the Provincial Governor's and Premier's apartments have been placed in the place of honour at the centre of the building on this main floor, with the clerks' and business office near at hand. Members' coat rooms are convenient to, but slightly isolated from, the ante-room. The reading room, stack room and committee rooms occupy the available space in the east wing, while the west wing is devoted to the writing room, the twelve offices for members, the public waiting room, lavatories, etc. It will be noted that all the rooms on this floor, as well as all other floors, are so arranged that there is no waste room nor dark corridors.

In order to provide for future growth, it will be noted by referring to the plot plan that extensions may be built at each end of the building, and extended in a southerly direction indefinitely, so as to give any desired amount of accommodation without interfering with the building as at present designed; in fact, the extended building will be as complete a unit as if designed and erected all at one time. It is proposed to provide for extensions to the stack room in the future by utilizing the two committee rooms, each of 600 feet area, and extending these, as well as the stack, out into the proposed wing as far as may be required. The staircase between the two committee rooms is so designed that a passage between the landings will be provided so that the stack room will be a continuous room when extended. It will be noted that the reading and writing rooms have been lighted from the north, which is important in a climate where the sunlight playing on the snow gives such an intense glare.

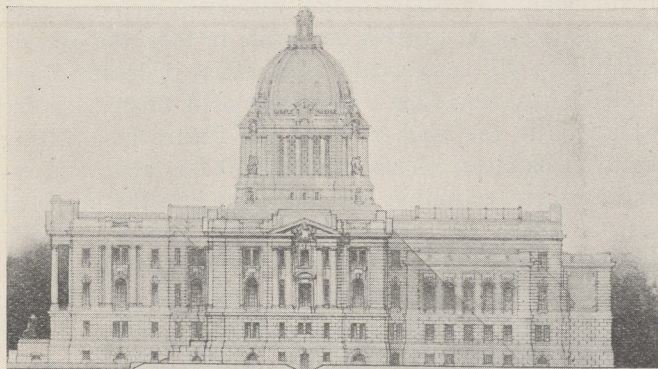
* Design Awarded First Place in Recent Competition.



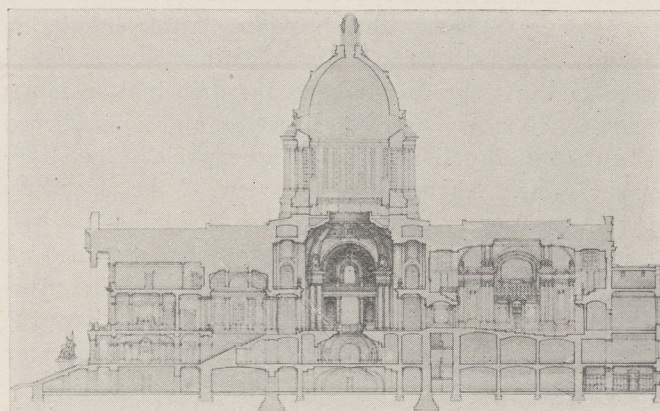
Front Elevation.



Rear Elevation.

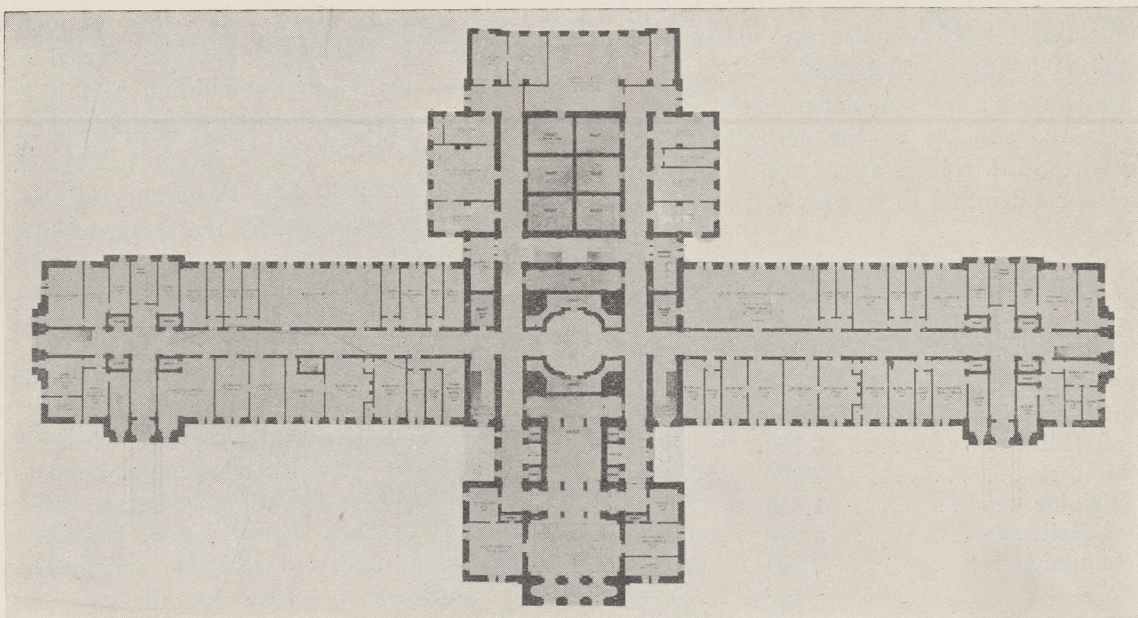
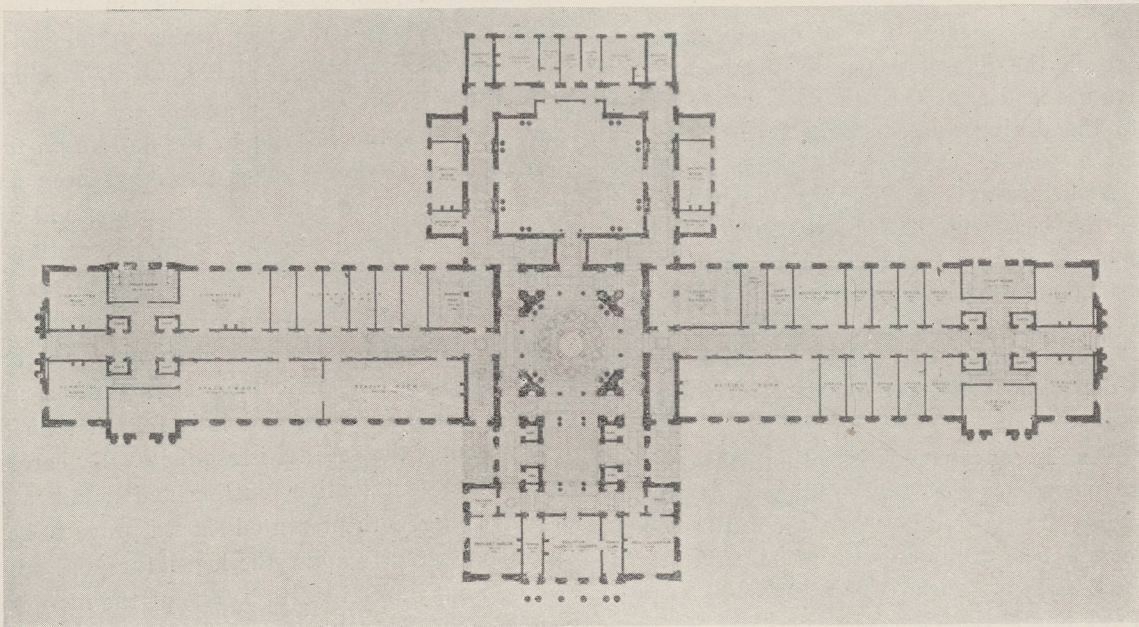
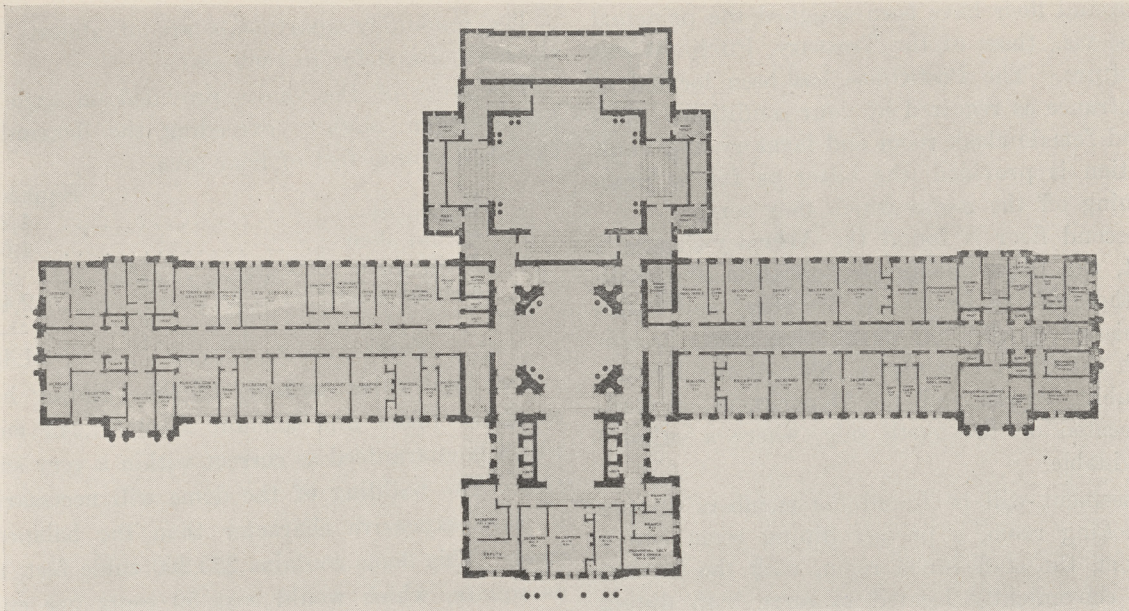


End Elevation.



Section.

Elevation Plans, Legislative Buildings, Regina, Sask. E. & W. S. Maxwell, Architects, Montreal.



Floor Plans, Legislative Buildings, Regina, Sask. E. & W. S. Maxwell, Architects, Montreal.

*about 25,000 ft.
floor area*

To the ground floor have been assigned the principal departments, viz., those of the Treasury, Public Works and Agriculture. The Post-Office has been located at the main entrance as required by your conditions. Ample male and female cloak room and lavatory and vault accommodation is provided, the latter as far as practicable opening off the rooms which they serve.

On the second floor is found the Attorney-General's Department, the Departments of Education and Railways, and those of the Provincial Secretary and Municipal Commissioner, while the draughting rooms in connection with the Chief Engineer's Office of the Department of Public Works and the Department of Railways are located on the north side, where a suitable light is obtainable.

In the basement will be found the members' dining room, a smoking room, a private dining room and a smoking room, the staff lunch room, with the kitchen department conveniently located to serve both dining and lunch rooms.

In addition to the elevator service for the members desiring to reach the dining room, two stairways for their exclusive use lead from near the Legislative Chamber direct to the dining and smoking rooms. It will be noted that a private stairway also leads from the stack room on the main floor direct to the newspaper files room in the basement. The Government Printer has been located in the west end of the basement, with a separate entrance door. The receiving, storing and distribution of supplies, etc., is thus facilitated. The balance of the basement is devoted to a storage chamber for each department and for quarters for the janitor and engineer.

The tunnel for the conveyance of heating pipes, wires, etc., from the power house to the building is shown on the plot plan, so arranged that when the future additions are erected the tunnel will be in the right relative position to serve them. This tunnel it is proposed to extend under the basement corridors, so that ready access may be had to all pipes, wires, ducts, etc., as well as to the elevator machines, the level of the drainage permitting of such an arrangement.

The floor areas for the various departments are permitted to be varied slightly, at the discretion of the competing architects, therefore, as a basis of comparison, the areas demanded and those provided are hereby given:—

	Area demanded.	Area provided.
Attorney-General's Department ...	5,800	6,469
Department of Public Works ...	13,750	13,656
Treasury Department ...	5,850	6,350
Department of Agriculture ...	8,250	7,401
Department of Education ...	3,750	3,835
Provincial Secretary ...	3,200	3,082
Government Printer ...	1,450	1,480
Department of Railways ...	3,650	4,077
Municipal Commissioner ...	3,400	3,000
Total ...	49,100	49,350

The remaining apartments are of almost identically the areas asked for in each case..

The areas of the vaults provided on each floor are herein given, slightly exceeding the demand for ten thousand square feet of floor area.

	Square feet.
Basement	4,206
Ground floor	4,650
Main floor ...	202
Second floor ...	2,400
Total	11,458

The total cubic contents of the building have been carefully taken and amount to 4,291,242 cubic feet, which is guaranteed as correct within a very small fraction. The building of the dome will necessarily be of a more expensive character than the balance of the work. This dome contains 223,200 cubic feet, measured as square, which would cost 50 cents per cubic foot, equaling \$111,600. The main portion of the building contains 4,068,042 cubic feet, which would cost 28 cents per cubic foot, equaling \$1,139,051.76, making a total of \$1,250,651.76.

In designing the exterior of the building a free adoption of English Renaissance work has been employed, as being best suited to the requirements, and offering a logical, sensible and architecturally interesting solution of the problem that marks it unmistakably as representative of the British sovereignty, under which the province is governed. The combination of red brick and pale buff stone is particularly happy when used with discretion in this style, and it is felt that no extended description of the facades is requisite. By careful study of massing, fenestration, outline and detail, a building such as is herewith presented should prove to be all that could be desired to house the legislature and administration of what is destined to be one of the most important provinces of the Dominion. To this end dignity, simplicity and purity of style have been combined with a monumental treatment of the best period of British architecture, to produce a building that it is believed will serve its purpose in the best possible manner. When the time comes to extend the administrative offices, etc., as shown on the plot plan, the beauty of the structure will be further enhanced by the symmetrical treatment of the proposed extensions.

A MODEL CITY.

It is the intention of the Grand Trunk Pacific to make a model city of Prince Rupert, the Pacific coast terminus of the great transcontinental road, now being built, and with this end in view two Boston landscape architects are on the way to the site of the new place. Messrs. Brett and Hall, the architects, will spend some six or eight weeks on the ground, and will make a thorough study of all the conditions, in order that they may be able to present a report on their return.

HOW TO PRESERVE STONework

By W. M. BROWN, C.E.

All stonework is more or less subject to decay. The causes which operate upon it in this direction are partly of a chemical and partly of a mechanical character. The deleterious elements in the atmosphere of large cities are the cause of much of the decay observable in public buildings, and it is particularly so where there are chemical works or large manufactories that give forth large volumes of smoke or diffuse obnoxious gases. The decay may also be traced to the absorption of water, so that it will depend upon the nature of the stone whether it will be very susceptible to the influences of the weather, or be able to withstand the variable changes that may occur, without sustaining any damaging effect. Whatever may be contrived to check the admission of water into the heart of stonework is likely to succeed in arresting any decay that might proceed from that source. One of the best methods, however, for cleaning stone buildings is by using clean water forced through the hose of a fire engine, or similar operation. The method of using the sand blast, or the re-working of the face of the stone by whatever means, are now considered to be a mistake, as upon the "skin" of the stone being removed the "pores" are then opened, and disintegration and decay are frequently the result.

Chemical action upon the stone occurs when the pores become filled with water, and the surface becomes exposed to the atmosphere. Mechanical action may be said to take place whenever the moisture in the stonework becomes frozen, thus causing expansion of the cementing material of the stone, when disintegration ensues. There have been several devices resorted to in cleaning stonework, and we would here indicate some of the methods.

In France there has been introduced a certain composition called "Lithol," which is used for cleaning stonework. There are various substances which are added to the usual hydrochloric acid, so as to lessen its danger and increase its efficiency. The following is a note of the various ingredients and proportion of same used in its composition: "Five grammes of bisulphate of soda are dissolved in one-tenth litre of warm water; five grammes of powdered cream of tartar or bitartarate of potassium are dissolved by shaking in 235 grammes of hydrochloric acid, and one-tenth of a litre of water is then added. These two solutions are then mixed, when a certain amount of sulphurous acid will be evolved; 35 grammes of oxalic acid are dissolved in half a litre of water at 140 degrees F., and added to the previous mixture, and then the whole is filtered. These operations may be carried out in glass or enameled vessels. The solution should not be left unstoppered, as in time the sulphurous acid would be changed."

There are several devices that have been tried with more or less success to remedy decay in stone. On some portions of St. Paul's Cathedral in England, and more especially underneath the coping stone which is round the base of the dome, there is to be found a grey or black substance, which in some places is about three-quarters

of an inch thick. It can be easily powdered, and under the microscope shows no trace of organized growth. The following is its percentage composition, according to analysis by E. G. Clayton, F.I.C.: "Water, 24.54; calcium phosphate, 2.22; calcium silicate, 1.63; magnesium silicate, 0.67; iron silicate, 2.40; and sand and uncombined silica, 8.06." The deposit, therefore, consists chiefly of calcium sulphate hydrated together with some silicious matter. This principal constituent is supposed to be chiefly formed by the action of the sulphuric and sulphurous acid in the smoke from the surrounding chimneys upon the stone, aided in some degree by the action of rain.

There is a material termed "soapstone" which possesses what may be considered extraordinary qualities in counteracting atmospheric influences, especially those which are apt to cause the corrosion of iron and steel. It is considered that there is no other material which is capable of laying hold of the fibre of iron and steel so readily and tenaciously as this. It is remarkable that in China soapstone is extensively utilized in the preservation of structures built of sandstone and other stones that are liable to crumble from atmospheric effects, and even the powdered coating of soapstone on some of the obelisks in that country has been the means of their preservation for hundreds of years.

In some cases common drying oils, a mixture of linseed oil and sulphur, linseed oil and beeswax, solutions of various gums and resins, have been utilized for this purpose with considerable success. Oil has also been used frequently with success, when it is applied thin, and when the stone is perfectly dry. Also a solution of common soap dissolved in boiling water, allowed to dry, and then a solution of alum dissolved in water applied, has been found advantageous.

Those parts of the stonework of buildings most liable to decay are the lower mouldings, the tops and under parts of cornices, and string courses, owing to the percolation of the water through the stone. When oil is applied to these surfaces it would prevent the water sinking into the stone, and so counteract in some degree the tendency to decay. An experiment has been tried to make mortar watertight by utilizing silicate of soda and soap and alum with cement. It was discovered that the effect of the silicate of soda lessened the absorption of ash mortars about 50 per cent. The soap solutions alone did not give increase of strength, but decreased the permeability about 50 per cent., while the effect of alum and soap strengthened the mortar, and hardened it, with 50 per cent. decrease in absorption. The mixture was composed of 5 per cent. solution of ground alum and water, and a 7 per cent. solution of soap and water. The alum water was mixed with the mortar in the proportion of one-half the ordinary gauging water; and then the application of the soap solution was made to bring the mortar to the required plasticity. The action of the soap and alum together causes the precipitation of an insoluble

compound in the pores of the mortar. Lime-wash has frequently been utilized as a preservative of stone from decay, but it is said to be only of a temporary character, until the protecting coat of lime is eaten through.

Professor Church, however, contends that the use of lime-wash is objectionable, as although it undoubtedly acts for a certain period as a preventive of the further influence of sulphuric acid (provided it retains its place on the decaying and crumbling walls), it must give rise to more sulphate of lime, the substance whose formation, presence and migration have been the principal cause of the decay. Professor Church suggests that if lime-wash be used at all it should have precipitated carbonate of baryta as the chief ingredient, the baryta being as effective as lime in excluding the corrosive sulphuric acid, while at the same time it can add no injurious soluble salt to the decayed stone. Those large blocks of stone which are frequently utilized for ordinary building purposes have sometimes a number of minute, microscopic fissures running through them for a short distance, this having a tendency to considerably weaken the stone as a whole, and allow water to find its way into them, thus soon producing disintegration.

There has also been used with considerable success, precipitated carbonate of baryta for the prevention of seum and discoloration on facing bricks, terra cotta, tiles, ridges, etc. The application of baryta water is considered the best known treatment for arresting the decay of stone. When a solution of hydrate of baryta is repeatedly applied in dry, warm weather, with the necessary precautions, it scarcely changes the color of the stone, it forms no skin, penetrates deeply, and serves to render solid once more disintegrated stone where injured by the formation of sulphate of lime by transforming this soluble compound into soluble sulphate of baryta, at the same time setting free caustic lime, which gradually becomes carbonated into chalks. The hardening and consolidation of the decayed stone are principally due to those changes, but it may be weeks and sometimes months before the completion of the process. It is preferable to make the application of the baryta with a diffuser. By the experience of four years it has been shown that the baryta process involves no risk of injurious consequences, though possibly after a lapse of a few years an additional application of baryta may be necessary.

There has been on the market for some time a preparation termed "Fluate," which renders stone and brick waterproof. It is colorless and does not affect the appearance of the material to which it is applied. The result is said to be permanent. The cost of labor and materials is computed at 1 1-2 d per foot of surface covered.

TORONTO SCULPTOR WON.

Mr. G. F. Alward, of Toronto, is the successful artist in the competition for the proposed statues of Baldwin and Lafontaine on Parliament Hill, Ottawa. Ten designs were received by the Art Commission.

ADVICE—BUILD NOW.

"Now is a good time to build," says Architect Fitzpatrick, executive officer of the Building Inspectors' Society, of New York, a national organization which keeps in touch with building matters all over the country.

"The money stringency developed some peculiar effects upon the building situation. Just prior to the so-called panic everything was at the highest price, not only materials, but labor. Wages were at the highest point ever reached, and the amount of work done in a day was the lowest ever given. Labor was exceedingly independent and the result was that a building cost anywhere from 20 to 60 per cent. more than a very few years ago.

"Tightening of money has scared people generally; manufacturers are anxious to get rid of their stock and get some money in, and may be expected to make low prices on materials, and while wages have not been reduced to any great extent, men are desirous of holding their jobs and are rendering immeasurably better service. It is only a question of time when conditions will be at the same old high priced standard.

"Unmistakably the people have had a stiff enough dose of stock depreciation and have seen the folly of trying to make big returns by stock gambling. More and more will be brought home to them that real estate and building constitute infinitely safer investments, and it will not be long before we may have boom times again in building."

CIVIC BEAUTY.

An effort is being made by the leading architects of Washington, D.C., to create a more artistic effect in the general appearance of the city by specifying in their work the use of brick and stone in harmonious colors and discouraging the employment of materials which would tend to destroy the artistic harmony of the particular locality in which the building is to be. Such changes have taken place in brickmaking in recent years and such a variety of clays are used that some of the best architectural effects are produced in that material. Many architects find greater pleasure in devising color schemes for the decoration of the buildings which they design than in any other part of their work, for, although architects are primarily concerned with considerations of time, yet color must play a large part in the resultant effect, particularly with regard to interiors. There are some architects who pay little attention to this particular department of their work, merely specifying that the wood and ironwork shall be painted so many coats of selected colors, and making eventual selection by proxy, or leaving it entirely to their clients.

DEER LODGE, SILVER HEIGHTS, WINNIPEG

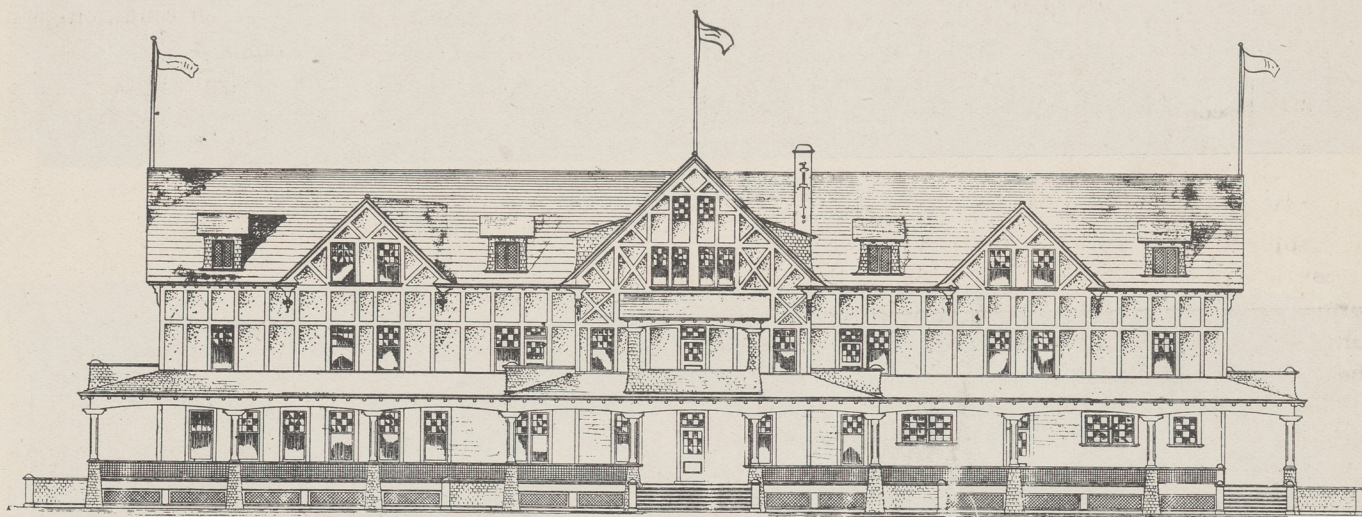
PRATT & ROSS, Architects, Winnipeg.

The new Deer Lodge Hotel is one of the most complete, luxurious and up-to-date road houses on the continent. Built on the exact spot where stood its predecessor, it occupies one of the finest sites in suburban Winnipeg.

The building is in early English style of architecture, clapboarded to the first storey and then beam and plaster work with pebble-dash plastering on wire lath. The roof is shingled and stained a tile red. The exterior woodwork is painted white with green trim and the beams stained dark oak. Wide verandahs run round the front and both ends of the building. The rotunda, dining room and bar room have beamed ceilings, while all the main rooms are paneled in British Columbia fir stained a dark oak color. A rich red flooring, made by the Ajax Company, of Winnipeg, is used in all the above rooms, while a light grey flooring with green border is laid in the kitchen and lavatories. The latter have a dado of tile and are finished above that in Keen's cement laid off in courses.

and F. H. Mills, of the A. F. Banfield establishment, who looked after the interior finishing and furnishing. To the west is a well appointed office with a bell system, to the south is the entrance, to the north is the stairway leading to the upper floors, while to the east is a Dutch fireplace. It is one of those old-fashioned open grates under a solid stone structure which reaches to the ceiling and is made of boulders taken from the bed of the Assiniboine river and chipped into shape. Its fixings, andirons and equipments are of hammered iron, which are appropriate in their solidity and graceful angles. Brilliantly lighted by electric lamps which shine from fixtures specially made for the hotel, the room is a work of art and one of the finest of its kind in the country. Along the top of the paneling are placed bric-a-brac and rare pieces of chinaware that lend a finishing touch to the colonial mural decorations.

The dining room, measuring 52 by 26 feet, is furnished with quarter-cut oak and hung with mohair and champagne colored silks. Electric lights, placed high,



Perspective—Deer Lodge Hotel.

Entering the south portal the visitor steps into a broad hallway off which doors open into the rose room and the blue room, two pretty ladies' parlors. The rose room is finished in pink rose tints, hung tastefully with silk and decorated with some very fine art productions representing scenes of the halcyon days of Venice and Rome. The blue room is similarly treated with a variation in the color scheme.

The entire interior is laid out in mission style and furnished with weathered oak furniture, each piece of which has been specially selected for an appropriate place in the building. The free and easy atmosphere of the road house has not been sacrificed in making the interior beautiful, but a maximum of elegance is attained, while the dominant note of the entire furnishing and decorative scheme is artistic in the extreme.

The rotunda, a fine roomy, high roofed hall, is a work that reflects great credit to its designers, Mr. Chadwick

diffuse a pleasing illumination on the spotless linen and the bright new cutlery. The kitchen is placed to the rear of it and no expense has been spared to make the culinary department as complete as possible.

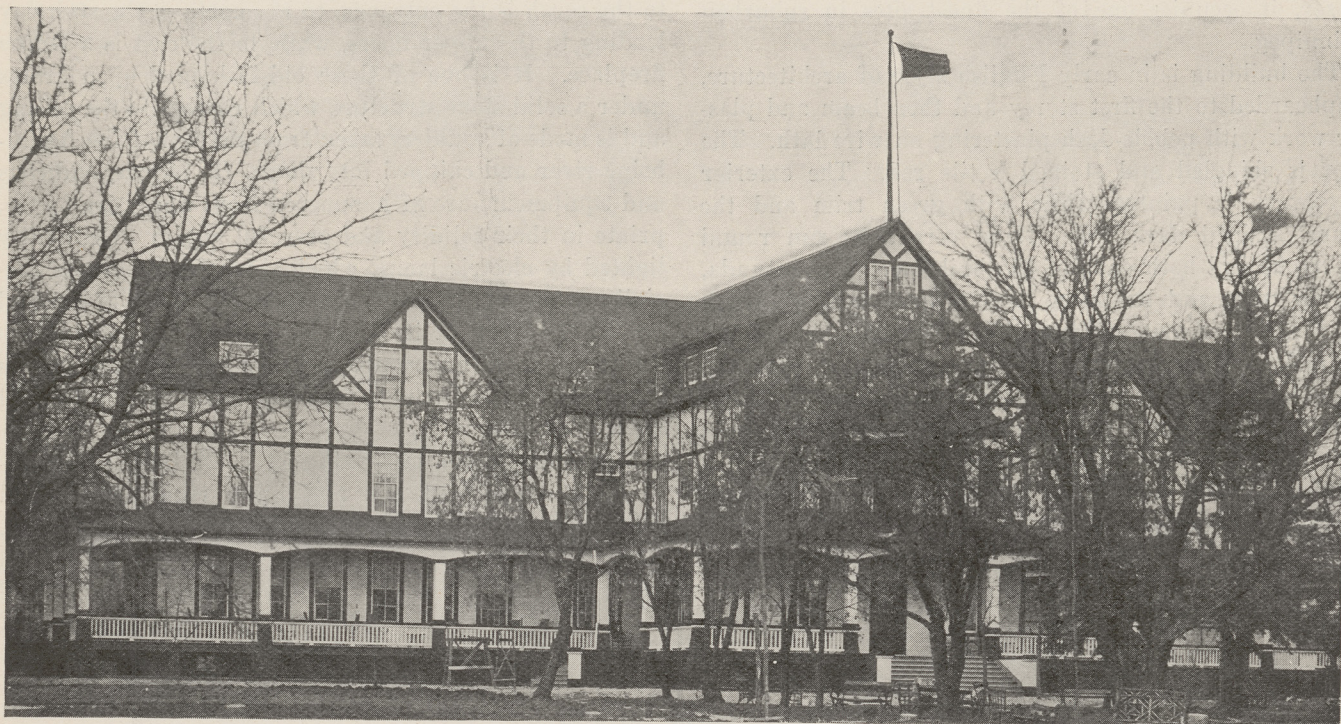
On the first floor is a music room. A mission style piano, made expressly for the hotel from the design of an old Jesuit desk, is among the features, while the floor is laid with expensive Turkish rugs. Green and gold are the prevailing colors. The window hangings are of tapestry, lined with smoked silk. Opposite the music room is a reception room finished in green. On every floor there are ladies' cloak rooms, toilet rooms and places for writing.

A ballroom, 56 by 26 feet, is placed in the west wing above the dining room, and is finished in the same artistic manner as the rest of the house. The hotel contains 74 rooms in all. Two small private dining rooms for exclusive parties are placed on the main floor, handy

to the main dining room. The bar is one of the finest in the province. The bedrooms, of which there are 32, are finished in British Columbia fir, with floors of the same material. They are both single and en suite, the

latter being supplied with private bathrooms. The servants' quarters are in the kitchen wing, which extends north from the dining room.

The building is lighted with electric light and has a



Front Elevation—Deer Lodge.



Rotunda—Deer Lodge.

private water works and sewerage system. The water is drawn from a depth of 135 feet by an electrically-driven automatically-controlled pump, which maintains the pressure at between 15 and 20 pounds. In case of fire the pressure can be increased to 100 pounds, as the build-

ing is fitted with a high pressure system, with fire hose on every floor, and alarm gongs.

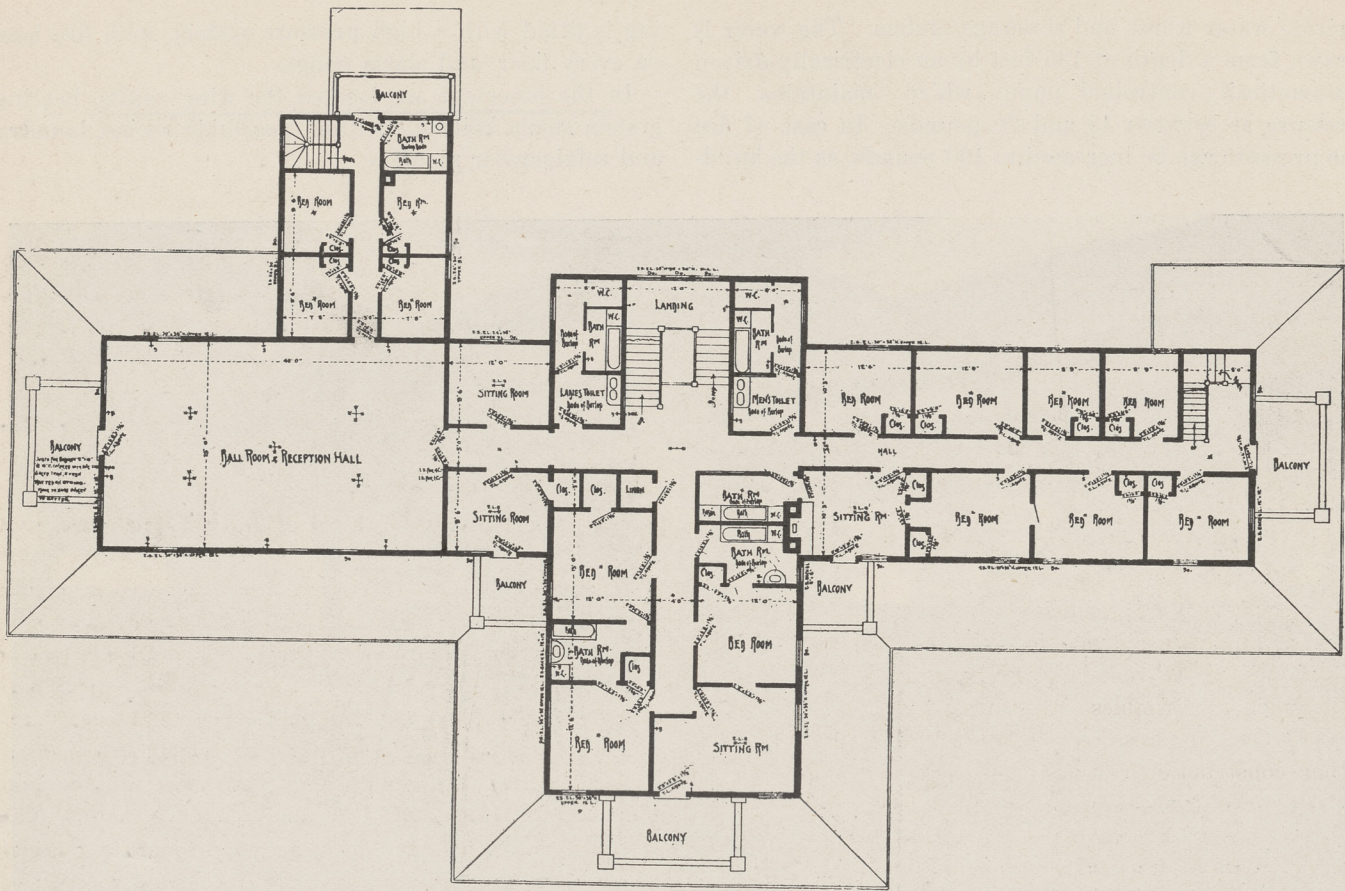
In the basement are located the wine vaults, heating system steam boilers, fuel and vegetable rooms, laundry and refrigerator plant.



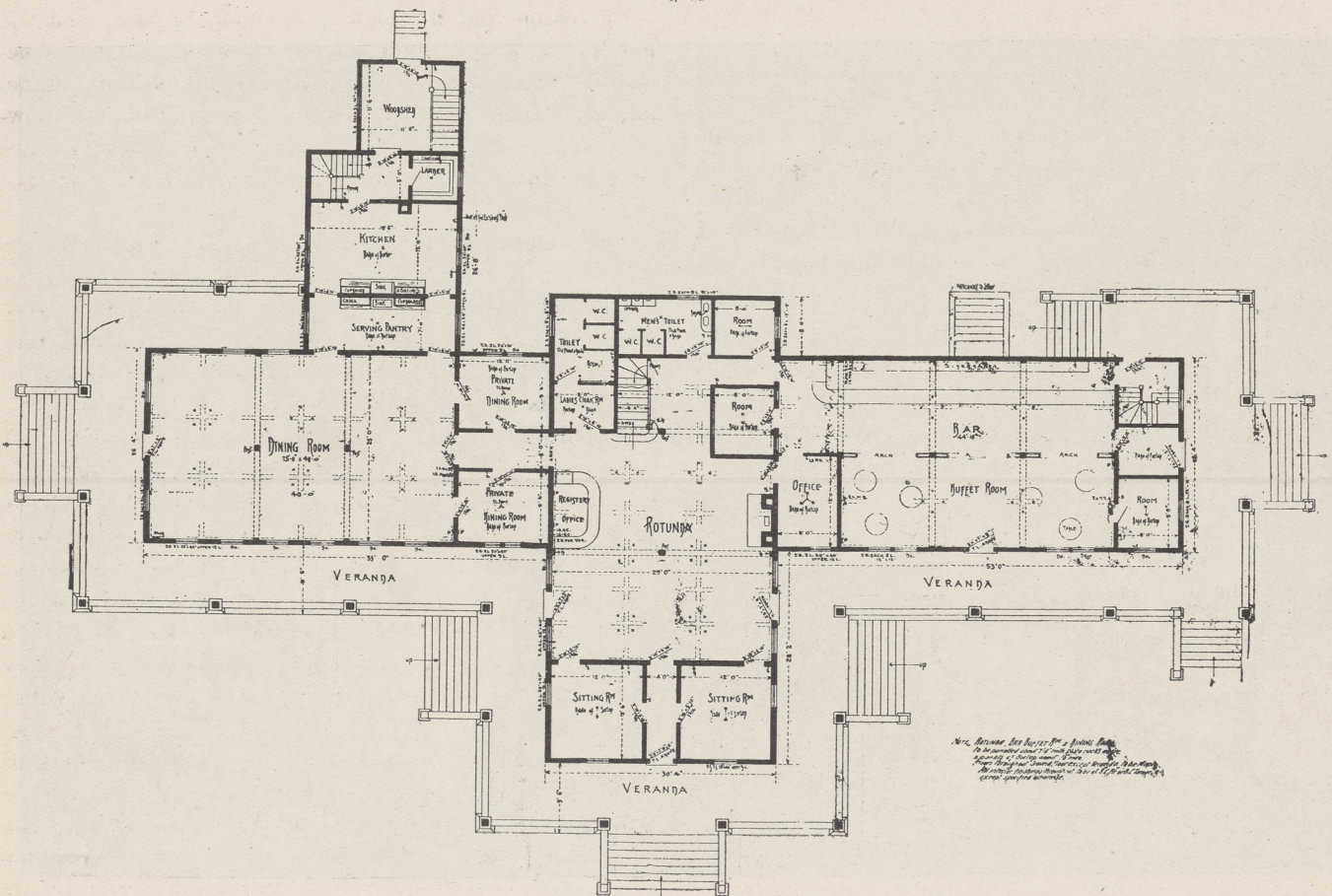
Bar Room—Deer Lodge.



Dining Room—Deer Lodge.



— FIRST FLOOR PLAN —
SCALE 1/8" = 1'-0"



— GROUND FLOOR PLAN —
SCALE 1/8" = 1'-0"

Floor Plans—Deer Lodge.

THE ARTISTIC EXPANSION OF STEEL AND CONCRETE*

The artistic use of steel and reinforced concrete is considered a new problem in architectural design.

Wherever a combination of materials which is somewhat new in character becomes usual by the number of its examples, there appears a desire to analyze its component parts, to make its architectural expression characteristic, to enroll it under architecture *raisonne*, and naturally to exaggerate its peculiarities in the process. The intention is excellent and admits of no contrary argument. What can be more undeniable than that architecture should express structure, and that unusual structure should demand unusual architecture? If any contention is at all possible, it can be merely in relation to the degree in which this construction is unusual, and, as a corollary, as to how unusual the architecture must be to express it. Is reinforced concrete new in the elemental factors of structure, and to what extent? Its main factors are vertical supports and horizontal loads (in which it resembles Greek structure), both of which are reduced in cross sections to areas less than in any other construction. It has no structural arch, though it has curved trusses or beams (in which it does not resemble Roman structure). It has continuous vertical factors with the horizontal factors inserted between (in which it resembles much of Gothic architecture), and it has horizontal planes in its floors which appear on the facade, in which it is in no way unusual. What are the differences, apart from the areas of its cross sections, between it and other structures?

First, it is made up, as far as its vertical factors are conceived, of slender piers; second, as far as its horizontal factors are concerned, by beams of great possible span; and both piers and beams are each homogeneous, not built up of separate blocks as in stone or brickwork, and therefore corbels are inconsistent. A reinforced concrete structure is therefore a pier and beam structure of slender supports and long spans, its intercolumniation being much greater than in any previous type of building, and from our constant association with shorter spans the beams seem weak.

The openings between the piers are unusually large, the whole structure appearing to be slight and undeveloped. Up to this point the choice of treatment seems to be merely as to whether the continuous vertical supports shall be announced or the successive planes of the floors. The decision as to which of the two methods of expression shall be adopted depends entirely upon the location of the building and upon the proportion of its height to its width. Isolated buildings of great height may well be treated with long, vertical lines; but, in the majority of cases, the building requires a horizontal treatment, as it is associated with other buildings in the same block, and its assertion of vertical lines is overwhelmed by the length of the base line of the block. Also

the vertical lines are ineffective in shadow, as they can have but slight projection, and as they are merely surface indications of interior structure and are not buttresses. Horizontal lines, on the contrary, always produce shadows. In most cases, therefore, the treatment of reinforced concrete buildings by horizontal lines announcing their floors (the distances of which apart are of much more nearly fixed dimensions than are the intercolumniation of piers or the height of verticals) is better in relative proportion to adjacent buildings, and affords stronger evidence of purpose than does the exaggeration of the verticals.

The apparent weakness of the long lintel has been mentioned. This can be modified in several ways, either by crowning the centre, which is of little value in long spans and is inconsistent with the concealed structure, or by arching the lower line of the lintel, or by bracketing at the piers. The cornice is capable of any treatment which does not suggest stone corbels or modillions. The next problem is that of the necessary filling treatment of spaces between factors of main structure of the openings between the piers and the successive floors. This is manifestly a screen only, whether of plain surface or of fenestration. It supports nothing. Its structural requirements are merely those of frames to openings and of surfaces between these openings. As its structure is unimportant and can be done in many ways, there is no more reason that it should be announced than that the palm of a man's hand should announce the bones beneath. The anatomical structure of the building is adequately recognized when the piers and lintels are acknowledged; in fact, it is not necessary even in architecture *raisonne* to even announce them, provided they are not contradicted.

The suggestions for this secondary treatment of curtain walls between main structural factors may either be derived from minor structure or may be surface ornament only. If from minor structure, it is probable that it will evolve into a system of slightly recessed vertical panels. As the vertical factors in the structure are usually more in number than the horizontal ones, and as these factors are slender, the stiles of such paneling would be narrow. Vertical paneling, whether of the type of perpendicular Gothic, or the panels with modeled or mosaic borders of Byzantine work, or the renaissance paneling of Fra Gioconda, are all suggestive of possible treatment. The frames to the openings can be treated like any frames, either simply or elaborately, as they are simply borders confining spaces. If, on the other hand, the surfaces are not to announce the minor structure, they may either be plain or have surface ornament, in the form of all-over patterns, low relief, mosaic or sgraffito, care being required only that the scale of the pattern or relief shall not be so great that it cannot be apparently readily carried by a thin wall. Deep reveals and soffits are necessarily artificial and not expressive of

* Paper read by C. Howard Walker before the recent Convention of the American Institute of Architects.

the structure, and the contrasts of light and shade usually obtained by these may be either produced by modeling or by *coro*, or both.

The basis of the structure is metal, which is concealed and protected in all important structural parts of the building, but can readily be announced in the openings, by grilles or delicate metal fenestration. Excellent opportunity and great latitude in design are possible therefore in the sub-division of the openings, either in cast or wrought metal, such detail being an admirable contrast to the other type of ornament of the concrete. The concentration and elaboration of grilles at the top of openings has numerous prototypes in all styles of architecture. Because metal is capable of long, sinuous curves, it is by no means essential that minor detail should adopt such an initial scheme and becomes thereby too important and out of scale with the other proportions of the building. The main surface of a reinforced concrete building is of concrete, a material which is homogeneous, has no joints and is actually a thin skin to the structure, but sufficiently thick to cover and disguise the joints of the structure. It is inferior to most stone in vivacity of surface texture and to both brick and stone in the scale given by constructive joints. It has, however, been more frequently used as a surface than any other material, and when finished with stucco, as with the Egyptians and Greeks, it presented a surface which admitted of equally the most vigorous and the most delicate polychromy. Its surfaces were those of unblemished parchment, making an admirable background not only for color but for *impasto* ornament. When two surface coats of contrasting colors were laid, *sgraffito* or scratched detail was possible, the only objection to this type of work being the action of frost upon it. Concrete surfaces also permit the insertion of fragments of other material, marbles, metal or glass or tiles embedded in it in patterns. Entire veneer of these, however, which entirely conceal the concrete, seem insufficiently supported unless they have their own independent system of apparent structure.

Another element of metal structure is that of the occurrence of stable projections, which are greatly in excess of those which can be safely supported by any other materials.

When such occur, as in bays, etc., the supporting factors should be strongly announced and even exaggerated, for we have not yet adjusted our sense of security of masses supported upon thin forms.

Ornament in architecture accents the component parts, either of the structure or of the composition of the facade.

That which accents the component parts of the structure either accents the joints or indicates the interstices of structure.

The accenting of joints is usually performed by mouldings, or by concentrated spots, such as rosettes and capitals.

The indication of filling of interstices such as *tympana*, *spandrels*, panels, etc., any of which could be re-

moved without jeopardizing the structure, is usually by ornamental patterns.

The ornament which accents lines of composition is usually on vertical axes, and is of specially designed spots, such as keystones, cartouches, exaggerated corbels, etc. This latter type is used sparingly or is absent in the best architecture of all style, excepting when it is in the form of pinnacles, canopies and heraldic scutcheons, in which case it has an individual purpose in addition to that of mere accent of vertical axis.

The position of ornament in reinforced concrete is not different from that of any articulated structure, but there are larger interstices, that is, larger surfaces of non-supporting wall; therefore it is not inconsistent that these surfaces, if ornamented at all, should be more generally ornamented than in stone buildings. But there is no necessity or object in suggesting clasps, straps, bolt heads and other small details in the covering of the metal. Nor is there any objection in making the ornament thin and tenuous, because of that quality in the skeleton. A man with small bones need not have slits for eyes and mouth.

The general effect of reinforced concrete structure is that of lightness, of delicacy. Its mouldings and ornaments should correspond in character. The chief problem is to prevent an effect that is trivial and that lacks stability. The only method by which slender structure and delicate detail can be made vigorous is by contrast of simple surfaces with massed detail. In this case the simple surfaces are over the structural factors and the curtain walls and the massed detail is associated with the openings and possibly with the cornice. Wrought metal grilles and balconies, elaborate fenestration, polychromy and surface modeling (both focussed), all afford opportunities for the embellishment of a system of structure which is devoid of large piers, deep reveals and heavy shadows. All are in accord with such structure and it is unnecessary to search for more sensational factors of expression. A reinforced building is very apt to express itself tolerably well if none of the architectural detail applied to it is in imitation of stone, brick or wood forms, if its metal ornament is wrought and its concrete ornament plastic or mosaic or painting. It presents but one new problem, that of making a thin thing as attractive as one with mass. As a matter of fact, solidity of mass enters largely into our feeling of permanency and stability, and it is probable that no large skeleton structure can ever compete with one having liberal third dimensions. Its character is that of lightness, which has always been associated with impermanency, but that quality accepted, as it needs must be, much can be done to make it attractive without inventing combinations of forms which are uncalled for and which in themselves have no intrinsic value.

One of the constant criticisms of Roman architecture by instructors in architectural design is that the orders were used by the Romans merely as an ornament applied to the face of the construction. Partly engaged columns

and pilasters which are not needed to indicate piers are amongst the examples cited of this solecism in design. Steel and concrete structure can, however, be well expressed in this manner, the engaged column often following literally the support within it, and the entablatures indicating the deep girders. It is, of course, unnecessary that either the caps or the mouldings of the entablatures follow classical or other precedent, excellent opportunity being afforded for variants suggested by the relative proportions of beams to lintels and of both to the facade. Original capitals especially may be suggested by the bracketed forms at the tops of vertical supports and may be of as simple geometric type as are many of the Mohammedan capitals. The sole reason that well-known styles are cited in connection with the possible treatment of steel and concrete forms is as a means of explanation of the character of the forms which may naturally be developed from the structure.

The design and ornamentation of the interiors of steel and concrete structures, in which the steel is covered, is not unlike that of any structure of columns, slender piers and beams.

In the cases which at times occur where protection from fire does not demand that steel structure shall be covered, and in which exposed steel is largely in excess of accessory concrete, the problem of artistic treatment becomes of a different character. Such structures are armory and large hall arched trusses, bridge spans, etc., i.e., either straight or curved trussed beams. These are especially interesting in elevated railway structures and elsewhere where they are so frequently and continuously conspicuous, and where they are in this country so persistently made utilitarian only, with but little attention paid to the possibility of subtle line. This is all the more to be deplored from the fact that metal if scientifically related in its form to strain and stress takes naturally some of the most delicate and subtle curves possible, but the custom, because material is cheaper than labor, is to erect structures assembled of straight lines only, with the occasional use of curved lower members. This is the principal reason for the apparent crudeness of steel structures. They are articulated structures, built up of component parts bolted together. The interstices are larger in area than the factors of structure, and the structure has therefore a latticed cobweb effect. Its satisfactory appearance depends entirely upon the design of the cobweb.

The lines of the main factors of the trusses can have the spring and curve which are so characteristic of metal under pressure while the minor factors of struts, rods, braces, etc., may be assembled, so that certain combinations repeat and others indicate design and their silhouettes may be studied. For a steel truss structure inside its main lines is effective by its silhouette alone. In many cases the mere multiplicity of parts is detrimental to scale; the perpetual crossing and recrossing of lines being more suggestive of wreck than of safety. So much is this the case in parallel bridge trusses that covering the structure or filling the interstices of the two outside trusses is at times advisable to give apparent stability to the span.

SKETCHING CLUB OF THE P. Q. A. A.

The third annual general meeting of the Club was held on January 15 last, at their rooms, 5 Beaver Hall Square. The various reports submitted show that things are in a flourishing condition, although a late start was made this session. Since January, 1907, sixteen weekly meetings were held, nine lectures, two sketch design competitions, one discussion, two committee meetings, one club night and one meeting adjourned. Two exhibitions were held at the rooms, one of the winter's and one of the summer's work. The work submitted showed an improved standard over the preceding years, although in the summer competitions the number of competitors showed no increase. However, as far as measured drawings are concerned, it has been pointed out that the work worth measuring has been nearly all measured already, so that the summer work will have to be rearranged. During the past summer the Club held excursions to the following places, where interesting specimens of local work are found: St. Genevieve and Terrebonne, as well as visits to modern buildings in course of erection, including MacDonald College at St. Annes' and a new convent on Sherbrooke.

A gratifying increase in the attendance at lectures was noticeable, the following being a list of last year's work:

Jan. 16.—General meeting.

Jan. 23.—"English Architecture," lecture by Prof. Nobbs.

Jan. 30.—"Leaded Glass," lecture by Mr. Lemasue.

Feb. 6.—Sketch Design Competition.

Feb. 13.—"Electric Installation," lecture by Mr. Philip Lahee.

Feb. 20.—"Corinthian Order," lecture by Mr. J. B. Anglin.

Feb. 27.—"A Trip Through Europe," lecture by Mr. A. Byers.

March 6.—"Scotch Baronial Architecture," discussion.

March 13.—"English Gothic Cathedrals," lecture by Mr. C. Burgess.

March 27.—Meeting adjourned.

April 10.—Committee meeting.

April 17.—"Architectural Iron Work," lecture by Mr. Stight.

The present winter session opened on December 4, 1907, when an interesting talk was given by Mr. Randolph Bolles, architect, of New York, on the work and methods of the "Ecole des Beaux Arts." This proved more than interesting, being on the eve of the competition work, and, judging by results, has had an effect on the students' work.

A feature of the ensuing session's work has been the "Club Nights," these being a meeting of members for study in the library and of a more social order than lecture evenings. These have proved to be a distinct success and have been instrumental in infusing a little "atmosphere" which is usually looked for among students of the arts. Water coloring is also being taken up seri-

ously, and a class is being formed under the charge of Mr. L. L. Kilpin of London, Eng. This is to be held on a separate night from the usual Wednesday meetings and will not interfere with the ordinary working of the Club. The membership has increased considerably, and a strong effort is being made to make this a record session.

JUDGMENTS OF COLORS.

If one could compare colors as seen in the light of a north window with the same colors as seen by the light of a late afternoon sun the result would be somewhat startling, writes Dr. Louis Bell in the "Illuminating Engineer." For the light of the sky is very rich in blue rays, as its hue in the sky suggests. Of the total light in a sunny day some fifteen to twenty per cent. is suffused sky light scattered from finely divided matter suspended in the air. Lacking such action, the sky itself would be black and every sunless room an abyss of darkness.

Therefore, daylight, as we know it, even in full sunshine has a bluish cast compared with sunlight itself, and diffused daylight by itself is quite strongly blue. Hence the blue shadows on snow compared with the warm hue of the sunlight, the contrast being heightened by the effects of simultaneous contrast.

These peculiarities of daylight must be borne in mind in the everyday work of illumination. Take, for example, the apparently simple question of determining the interior finish of a room. It is entirely possible to find tints which will do admirably in diffused daylight, but which will lead to complete failure in artificial light. A good type of this action may be found in a light shade of blue. A room papered in such a tint will be light and pleasant in diffused daylight, but when the gas is turned on there is trouble at once. For equal intensities in the red sky-light has some twenty-five times as much blue and violet as does gaslight. The blue paper kills the red by selective reflection, and the gaslight has no blue to speak of anyhow, so that the net result is almost entire absence of help from the walls in spite of their apparently light tint. On the other hand, deep reds and greens are of very low luminosity as diffusive surfaces, and although selectively they are not bad, they still kill the incident light most effectively, and many a man has had his gas bill doubled by employing them too freely.

A deeply colored paper may have a fairly high coefficient of diffuse reflection for a particular color, but if that color is of low luminosity this reflection is of no practical value. For example, a certain clear blue has a co-efficient of fully 70 per cent. for the blue and violet, but the actual luminosity of the region involved being only perhaps 5 per cent., the selective action is practically worthless. The moral of all this is that the colors for interior finish, when artificial lighting is a matter of importance, should be tried by the illuminant it is intended to use, for a daylight comparison, unless made by an expert in illumination, is likely to be very deceptive.

Akin to the errors in judgment involved in passing from natural to artificial light are those produced by

what one may call "mass effects" in color. These occur with both natural and artificial light, and are prolific sources of annoyance cursed on their account, and many a wallpaper condemned and soon replaced. The whole thing is so simple that it hardly needs explanation, and yet people in general persist in forgetting about it. Any interior illumination is the sum of that received direct from the radiant and that diffusely reflected once or many times from the walls. Therefore, the average color value is determined by the sum of these elements, and since at each reflection from a colored surface the favored color is relatively intensified, the more a particular color occupies an interior the more intense it becomes and the deeper in tone. A small sample of paint or paper is then an entirely fallacious guide as to the effect which will be produced. En masse the color grows stronger and more pervading, and the sample which looks just right may prove dark and muddy when in place.

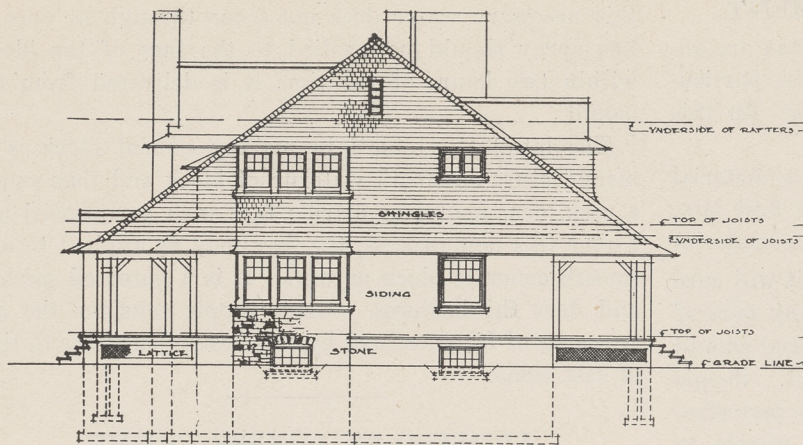
The ceiling color likewise is an important element in the general result. If this be white, all the color tones of the wall lighten, the same as they are influenced by simultaneous contrast, while a dark ceiling plays its own part in the general effect.

Striking changes in color tone, such as appear in fabrics under artificial light, are seldom found in interior finish, most pigments showing general absorption over a considerable range of the spectrum without sharply defined absorption bands. But the general effects are nevertheless very marked, and their inter-relation is sometimes most deceptive.

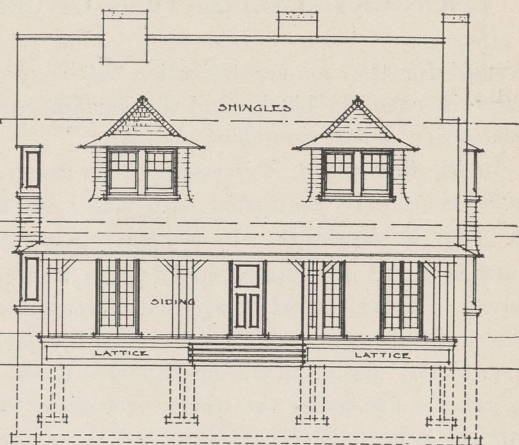
BOOK REVIEWS.

The Engineering News Publishing Company, New York, have forwarded us a copy of "Specifications and Contracts," a work which comprises a series of lectures delivered by J. A. Waddell, C.E., D.Sc., LL.D., an engineer of wide experience who has been associated with many big enterprises in this country, and practical working examples by John C. Wait, M.C.E., LL.B., well known as the author of "Engineering and Architectural Jurisprudence." Price \$1 net.

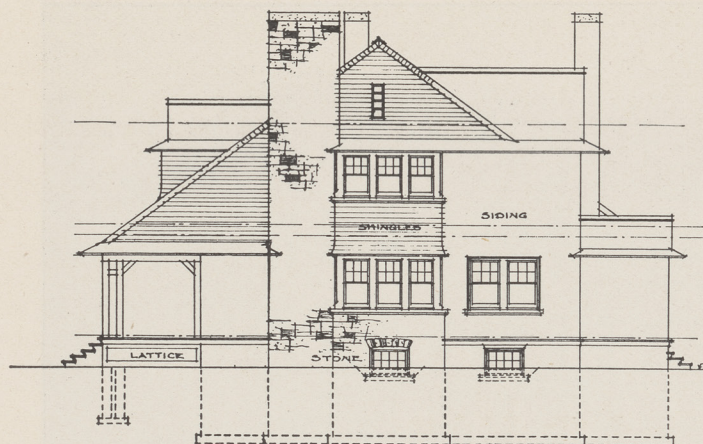
"Modern Baths and Bath Rooms," by Wm. Paul Gerhard, is an interesting and compact, yet comprehensive treatise upon one of the most attractive subjects of modern hygiene. Considering that the Romans of old, the Greeks, and others, took such a peculiar pride in every detail connected with the bath, it may perhaps be somewhat doubtful whether this work can be included among subjects of modern hygiene. Be that as it may, there has been during the last few years a revival of interest in the matter of bathing, and its honorable connection serves only to render the subject doubly attractive and convince one of its importance. The volume is printed in clear type and is neatly bound, consists of upwards of three hundred pages and contains one hundred and thirty illustrations, and is well worth a perusal. Publishers, John Wiley & Sons, New York. Price, \$3.



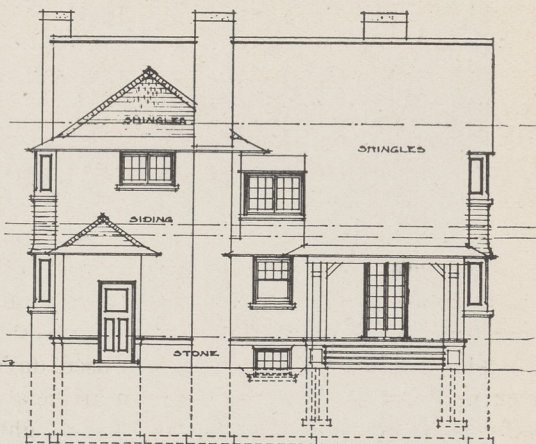
SIDE ELEVATION



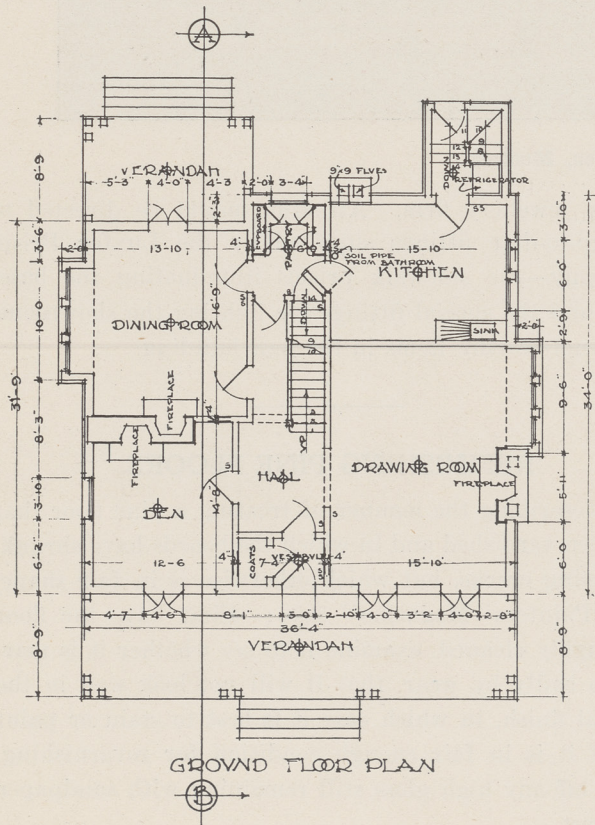
FRONT ELEVATION



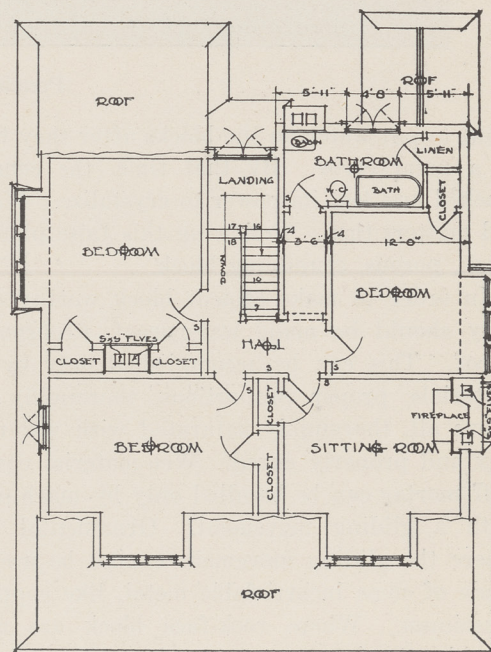
SIDE ELEVATION



REAR ELEVATION



GROUND FLOOR PLAN



FIRST FLOOR PLAN

Design by Sproatt & Rolph, Architects, Toronto. Cost \$4,000 to \$6,000.

NON-CRYSTALLIZATION OF CEMENT.

In a recent issue of "Concrete" some reasons are advanced for the non-crystallization of concrete, particularly in concrete blocks and similar products. In this connection a correspondent writes:

In the first place, it is essential for concrete material to be thoroughly saturated with water in the first mix, in order to crystalize. In the next place, the material must be cured in a damp, shady place, where it will cure slowly. Water should be applied as soon as any part of the material begins to reach its natural color and should be applied daily until the concrete sheds it. People in general are using the damp process in the manufacture of cement blocks. Many of them are unable to secure proper crystalization under this system. Why? Because the makers have been informed that it is suffi-

this necessary water does not come through at once, a fine spray should be applied to the face of the block, within two hours of the time it is delivered from the mould.

The latest "wrinkle" in making cement block is to manufacture a smooth waterproof block and then apply a rock, ornamental or marble face with compressed air. Under this new process, the face may be applied to any smooth concrete block or wall. It is a patented method and does the business. Many people consider the appearance of block treated by this system superior to that of cast stone.

LIGHTED BY LUXFER PRISMS.

The accompanying illustration shows the fine new premises at Montreal of Henry Birks & Son, the well-



Premises of Henry Birks & Son, Montreal.

cient to put water on the blocks after they have set. This is a great error. By that time, the cement has air-slacked and lost its power to crystalize. Water does not aid matters then. Following this false plan results in a weak, porous, crumbling block.

In order to make cement block worthy of the name, they should be made waterproof, fireproof and frost-proof. This can be accomplished only by using clean materials, proper proportions, thoroughly mixed, and, above all, thoroughly saturated with water in the first mix and properly cured. Wet material equivalent to a stiff mortar can be handled only by machines that strip with a gliding movement. Ornamental face-moulds, where the gliding movement cannot be used, should be made of some incorrodable metal, like copper, brass, or aluminum. Where rock-face block are made in the moulds, the face may be made with a 1-2 inch facing, 1:2, in the damp process. The body of the block, being made under the wet process, is thoroughly saturated with water and so will supply moisture to the face; in case

known jewellery firm. Attention might be directed to the up-to-date fittings supplied by the Luxfer Prism Company—the sidewalk prisms illuminating the basement and the special fittings for lighting the showrooms being noteworthy items in the new building.

REFINISHING PINE FLOORS.

In describing the manner of treating a pine floor that has been varnished and in which the boards have shrunk, producing cracks, but which otherwise is in fair shape, the "Painters' Magazine" says: First have the floor thoroughly cleaned, examine it to see whether it is marred so badly by wear, that it will not look well in the natural finish, in which case it is best to stain or paint it. If it is in fair enough condition for revarnishing, knock off any high gloss still remaining with sandpaper and dust.

The Canadian Architect & Builder

INSTITUTE OF ARCHITECTS OF CANADA.
P.O. Box 259, Montreal.

BOARD :

PRESIDENT - A. F. DUNLOP, R.C.A., P.Q.A.A., Montreal, Que.
VICE-PRESIDENTS - EDMUND BURKE, O.A.A., Toronto, Ont.
MAURICE PERRAULT, P.Q.A.A., Montreal, Que.
S. FRANK PETERS, M.A.A., Winnipeg, Man.,
SECRETARY - ALCIDE CHAUSSE, P.Q.A.A., A.I.A., M.S.A.,
Etc., Montreal, Que.
TREASURER - J. W. H. WATTS, O.A.A., R.C.A., Ottawa, Ont.

COUNCIL :

WM. H. ARCHER, F.A.I.A. - - - Vancouver, B.C.
C. B. CHAPPELL - - - Charlottetown, P.E.I.
F. DEGGENDORFER, A.A.A. - - - Edmonton, Alberta
DAVID EWART, I.S.O., O.A.A. - - - Ottawa, Ont.
G. E. FAIRWEATHER - - - St. John, N.B.
H. E. GATES - - - Halifax, N.S.
H. B. GORDON, O.A.A. - - - Toronto, Ont.
W. W. HILTON, R.A.A. - - - Regina, Sask.
R. P. LEMAY, P.Q.A.A. - - - Quebec, Que.
H. C. MCBRIDE, O.A.A. - - - London, Ont.
L. MUNRO, O.A.A. - - - Hamilton, Ont.
R. B. PRATT, M.A.A., A.R.E. & H.W.A. - - - Winnipeg, Man.
EDEN SMITH, T.A.E.C. - - - Toronto, Ont.
JOSEPH VENNE, P.Q.A.A. - - - Montreal, Que.

ONTARIO ASSOCIATION OF ARCHITECTS.

OFFICERS FOR 1908.

PRESIDENT - H. B. GORDON, Toronto
1ST VICE-PRESIDENT - W. H. WATTS, Ottawa
2ND VICE-PRESIDENT - GEO. W. GOINLOCK, Toronto
TREASURER - A. H. GREGG, Toronto
REGISTRAR - W. R. GREGG, 25 King W., Toronto

COUNCIL:

E. L. HORWOOD - - - - - Ottawa
H. E. MOORE - - - - - Toronto
MURRAY A. WHITE - - - - - "
HENRY SPROATT - - - - - "
J. FRANCIS BROWN - - - - - "

ALBERTA ARCHITECTS' ASSOCIATION.

PRESIDENT - F. DEGGENDORFER, Edmonton.
1ST VICE-PRESIDENT - W. M. DODDS, Calgary.
2ND VICE-PRESIDENT - H. D. JOHNSTON, Edmonton.
SECRETARY - R. PERCY BARNES, Edmonton.
TREASURER - H. A. MAGOON, Edmonton.

COUNCIL:

JAS. E. WISE. - - - - - Edmonton.
W. S. BATES. - - - - - Calgary.
E. C. HOPKINS, - - - - - Edmonton.
SOLAND W. LINES, - - - - - Edmonton.
W. STEWART CAMPBELL, - - - - - Edmonton.
H. H. WHIDDINGTON, - - - - - Strathcona.

PROVINCE OF QUEBEC ASSOCIATION OF ARCHITECTS.

OFFICERS FOR 1907.

PRESIDENT - R. P. LEMAY, Quebec.
1ST VICE-PRESIDENT - D. R. BROWN, Montreal.
2ND VICE-PRESIDENT - L. A. AMOS, "
SECRETARY - J. E. VANIER, "
TREASURER - J. R. GARDENER, "

COUNCIL.

A. CHAUSSE - - - - - Montreal.
E. B. STAVELY - - - - - Quebec.
J. O. MARCHAND - - - - - Montreal.
W. S. MAXWELL - - - - - Montreal.
L. LEMIEUX - - - - - Montreal.
A. PICHE - - - - - Montreal.

AUDITORS—A. R. DECARY AND C. DUFORT.

REGINA ARCHITECTURAL CLUB.

PRESIDENT - W. W. HILTON.
VICE-PRESIDENT - F. CHAPMAN CLEMESHA.
SECRETARY-TREASURER - W. B. VANEGMOND.

COMMITTEE

J. H. Puntin. Ernest E. Carver.

ARCHITECTURAL EIGHTEEN CLUB.

OFFICERS FOR 1907.

EDEN SMITH, President. J. C. B. HORWOOD, 2nd Vice-President.
D. LENNOX, 1st Vice-President. A. H. CHAPMAN, 3rd Vice-President.
J. P. HYNES, Secretary-Treasurer.

MANITOBA ARCHITECTURAL ASSOCIATION.

DIRECTORS :

S. HOOPER, President. J. D. ATCHISON.
J. GREENFIELD, 1st Vice-President. WM. FINGLAND.
J. CHISHOLM, 2nd Vice-President. S. F. PETERS.
L. T. BRISTOW, Treasurer. F. W. HORWOOD.
W. PERCY OVER, Secretary. N. MATTHEWS.

LONDON BUILDERS' EXCHANGE.

BOARD OF DIRECTORS :

JOHN WITTAKER, President. J. JONES.
GEO. HYATT, 1st Vice-President. C. H. GOULD.
GEO. EVERETT, 2nd Vice-President. GEORGE S. YOUNG.
GEO. S. GOULD, Secretary-Treasurer. A. NOBBS.
748 English St. THOMAS BEER.

TORONTO BUILDERS' EXCHANGE.

C. W. BATT, President. JAS. CRANG, Treasurer.
A. DINNIS, 1st Vice-President. J. L. PHILLIPS, Secretary.
GEO. GANDER, 2nd Vice-President.
Wm. Clark, J. B. Thomson, Jno. Aldridge, Wm. Smallwood, Geo. Duthie
Auditors: Walter Davidson, Jas. J. Browne.

VANCOUVER BUILDERS' EXCHANGE.

BOARD OF DIRECTORS

S. J. CROWE, President. C. P. SHINDLER
E. G. BAVNES, Vice-President. K. M. FRASER
N. URQUHART, Secretary. D. SAULT
J. YOUNG, Treasurer.

WINNIPEG BUILDERS' EXCHANGE.

J. W. Morley, President. J. D. Robinson, Treasurer.
W. P. Alsip, 1st Vice-President. A. Pearce, Secretary.
W. H. Carter, 2nd Vice-President.
Directors: W. Garson, G. W. Murray, J. A. Payne, J. Bourgeault, A. T. Davidson, W. Alsip, Sr., D. Cameron, G. A. Mitchell, E. Cass, F. Powell, Thos. Black, T. R. Deacon.

MONTREAL BUILDERS' EXCHANGE.

BOARD OF DIRECTORS

THOM S FORD, President. T. CHARPENTIER.
J. H. ARCAD, Vice-President. A. F. BYERS.
J. HERBERT LAUER, Secretary. JOS. FABIEN.
J. O. DESLAURIERS, Past President. SIMONEAU.
W. T. CASTLE. JOHN A. GORDON.
D. W. ROSS. W. A. RAMSAY.

VICTORIA BUILDERS' EXCHANGE, VICTORIA, B.C.

BOARD OF DIRECTORS :

W. D. MCKILLICAN - - - President
J. E. SMART - - - Secretary
THOS. CATTERALL - - - Treasurer

CHAMBRE SYNDICATE DE LA CONSTRUCTION.

(French Builders' Exchange.)
83 St. James Street, Montreal.

BOARD OF DIRECTORS.

T. CHARPENTIER, Jr., President. FELIX SAURAGEAU.
L. Z. MATHIEU, 1st Vice-President. H. CONTANT.
P. LECLERC, 2nd Vice-President. J. B. GRATTON.
N. T. GAGNON, Secretary. LOUIS PAVETTE.
L. Z. GAUTHIER, Treasurer. ELZ. COTE.

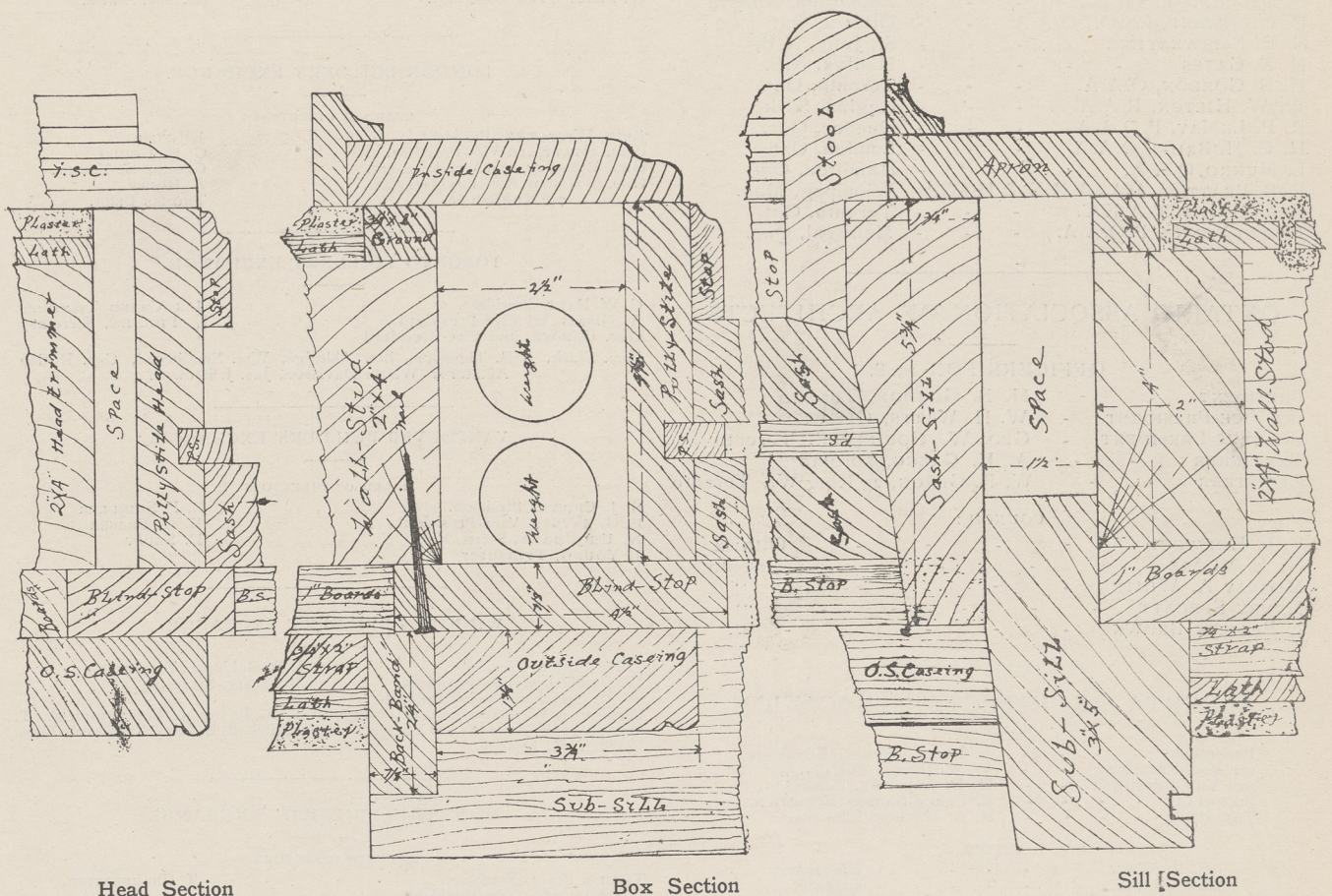
BUILDING WINDOW FRAMES

By W. C. A. STEVENSON.

The making of an ordinary window frame is a very simple piece of work, but when it is desired to build a window frame and lay out the opening in the building to receive it so as to make a perfectly windproof job, it will require a little extra skill and more accurate calculation on the part of the workman. It is too often the case that not enough care has been taken with the making and setting of the frames. In new houses I have seen wind enough come in around the windows to blow out a lighted match. This is a condition for which there is no excuse, and is due to pure carelessness on the part of the workman or the party in charge. The details shown herewith are designed for a roughcast or frame build-

ing boards 3-4 inch back from the edge of the opening on the sides and top, the opening is ready to receive the frame. The blind stop on head need be only 2 1-2 inches wide, as there does not require to be a space left for weights on top (see head section).

Second, the sub-sill has a corner cut out of it to allow it to drop over the opening instead of resting on top, thereby breaking the joint, as seen at sill section. The opening would be 11 3-4 inches higher than the glass, made up as follows: Sills 3 1-4 inches, 7 inches of wood on sash, 1 1-2 inches frame head and space. The back-band should not be put on until after the frame has been set into the building, as by this method you can get good



ing, and if carefully followed will produce a good tight job.

The special features of this frame are: First, the blind stops, instead of being the ordinary 7-8 inch by 1 1-2 inch, are 7-8 inch by 4 1-2 inch, and are allowed to meet the sheathing boards on the centre of the wall stud, as seen in the box section. Care must be taken to frame the opening in the building the exact width, which is 11 inches wider than the width of the glass, made up thus: 4 inches for wood on sash, 2 inches for pulley stiles, and 5 inches for boxes for weights. The opening must also be made perfectly plumb. Then, by holding the sheath-

nailing through the blind stop into the wall stud, as seen at the box section; then the back-band can be put around, thus making another break in the joint. The piece of back-band across the head would be given a slight pitch to form a drip over the head of frame, or, which would be still better, put a piece of galvanized iron over the top and allow it to extend up, say 2 inches, behind the strapping. This will prevent any water from working in behind the frame.

Third, the bottom sash and the stool on the inside of window are beveled to fit together, as will be seen at the box section. This makes a perfectly tight joint, and the moment the sash is lifted it frees itself.

EXPENSE OF BUILDING AT WINNIPEG.

A subscriber writes: I should esteem it a privilege if you could give me information as to current prices of building material (especially the different qualities of lumber—spruce, white and yellow pine, birch and maple) prevailing in the Winnipeg district at the present time, together with the recognized wages of tradesmen. I am making an estimate for a building outside of Winnipeg, and I understand that there is considerable variation from the prices prevailing in this city.

Answer.—Very little yellow pine is used in Winnipeg, British Columbia Douglas fir being used as a substitute. Prices of lumber are as follows:

NO. 1 PINE, SPRUCE AND TAMARAC				
DIMENSIONS, ROUGH OR S. I. S. AND I. E.				
	6 ft	8 ft	10 ft	14 x 16 ft
2 x 4	19 00	22 00	24 00	24 00
2 x 6 and 2 x 8	22 50	22 50	24 00	24 00
2 x 10	22 50	23 00	26 00	24 50
2 x 12	23 00	24 00	27 00	26 50

PINE, SPRUCE, TAMARAC AND LARCH				
MOUNTAIN STOCK				
Dimensions		Flooring		
2 x 4-12	\$25 00	4 or 6 inch No. 1	\$35 00	
2 x 4-8-14-16	25 00	" " " 2	33 00	
2 x 4-10-18-20	27 00	" " " 3	26 00	
2 x 6 } 8 to 16	25 00	Shiplap—Finished		
2 x 8 }		4 inch	21 00	
		6 "	24 00	
		8, 10, 12 inch	25 00	
Common Boards		Siding		
4 inch	\$21 00	6 inch No. 1	35 00	
6 "	23 00	" No. 2	33 00	
8 "	25 00	" No. 3	26 00	
10 "	25 00			
12 "	25 00			

Lath		
No. 1 Cedar, Pine, Spruce	5 00	
No. 2 " " "	3 25	

PINE—ROUGH TIMBER			
	12 ft.	14 and 16 ft	
3 x 6 and 3 x 8	25 00	25 00	
3 x 10	26 50	25 50	
3 x 12	27 50	27 00	
4 x 4 to 6 x 8	25 00	25 00	
4 x 10 to 10 x 10	27 00	26 00	
8 x 8	25 00	25 00	
6 x 14 up to 32 ft		30 80	

BRITISH COLUMBIA FIR			
DIMENSIONS, S. I. S. AND E.			
2 x 4, 2 x 6, 2 x 8, 8 to 16 ft	\$25 00		
" " " " 18 to 32 ft	27 00		
2 x 10, 2 x 12, 8 to 16 ft	25 50		
18, 20, 22 ft.	27 50		
24, 26, 28, 30, 32	29 50		
2 x 14 up to 32 ft	29 00		
3 x 4 to 4 by 12, 8 to 16 ft	27 00		
3 x 4 to 4 x 12, 18 to 32 ft	29 00		
6 x 6 to 6 x 12 up to 32 ft	29 00		
3 x 14, 4 x 14	29 00		

B. C. FIR TIMBER—ROUGH.			
8 x 8, 10 x 10, 10 x 12, 10 x 14, 12 x 12, 12 x 14, 14 x 14, 14 x 16, up to 32	\$30 80		
10 x 20	32 80		
8 x 20	34 30		
All Common Cedar \$2.00 per M. less than Fir.			

FLOORING.		
No 2 Red Pine, 4 in.	30 50	
B. C. Fir	40 00	

BOARDS—ROUGH OR S. I. S.		
No. 1 Common Pine, 10 inch	\$28 50	
" " " " "	25 00	
" 3 " " "	23 00	
" 4 " " " mixed widths	21 50	
" 5 " " " "	18 50	

SHINGLES.		
XXX B. C. a Cedar	\$3.45	
X X B. C. Cedar	2.45	
X X X Dimension	.65	

LATH.		
No. 1 White Pine	\$5.00	
No. 1 B. C. Fir	4.50	

HARDWOODS CAR LOTS, F. O. B. WINNIPEG			
White Ash, C/ands, 1" to 2"	\$64.00 to	\$67.00	
Birch, " " 1" to 2"	49.00 to	55.00	
Basswood " " 1" to 1 1/2"	45.00 to	50.00	
Rock Elm " " 1" to 2"	48.00 to	50.00	
Hard Maple " " 1" to 4"	47.00 to	55.90	
Plain Red and White Oak C/ands, 1" to 2"	65.00 to	63.00	
Quartered Red " " 1" to 2"	74.00 to	79.00	
" White " " 1" to 2"	85.00 to	90.00	

For cash there is a discount off these prices of 10 per cent., or 5 per cent. for 30 to 60 days.

Prevailing wages are: Carpenters, 35 cents to 45 cents per hour; brick and stone masons, 55 cents to 60 cents per hour; laborers, 25 cents per hour in summer and 20 cents in winter.

ESCO WATERPROOFING.

The Eadie-Douglas Company this coming season intend pushing the sale of their "Esco" products. This line was thoroughly tested last season in the east and met with much success where used. "Esco" waterproofing is said to thoroughly waterproof concrete, brick or stone; prevents the same from absorbing water and keeps the stone free from discoloration by the action of its salts or the weather. It is also largely used in foundation or cellar work as a regular waterproofing, while on the inside of walls it is used as a damp-proofing to be directly plastered upon. "Esco" steel coating is a very popular steel preservative. It will not peel off, protects metals from rust or corrosion, and is equally as good a preservative for wood as for iron or steel.

Voltar, the well-known anti-corrosive compound, manufactured by the Electric Cable Company, 17 Battery Place, New York City, has been specified by the bridge department for the painting of the Brooklyn Bridge.

300,000 square feet glazed in The Westinghouse Works Manchester.

PILKINGTON BROTHERS LTD.

FIREPROOF WIRED GLASS

Made in Three Varieties
CAST · ROLLED · POLISHED ·

A Positive Safeguard
against
Spread of Fire
Injury from Breakage
Burglars & Housebreakers

St. Helens Lancs.

MONTREAL Busby Lane TORONTO Mercer Street WINNIPEG Market Street VANCOUVER Powell Street

TREATING HARD MAPLE FLOORS TO STAND CONSTANT WEAR.

The best treatment of hard maple floors, when the natural color of the wood is to be well preserved, is to apply not less than two coats of bleached shellac varnish to the prepared floor, but for good work three coats are recommended. The white or bleached shellac varnish for this purpose should be the article known to the trade as grain alcohol shellac, which is bleached gum shellac, cut with denatured alcohol and far superior in every respect to the article made with wood alcohol. As wax is objected to, the shellac, in order to prolong its life and yet keep the wood light in color should receive a coat of floor oil, composed of 9 parts raw linseed oil and 1 part drier, that is well rubbed in, which will produce a dull smooth finish. As the floor becomes worn, it should be gone over with floor oil at least once a month, if possible oftener, with a floor oil, that is made by mixing, say 8 pints of raw linseed oil, 2 pints turpentine and 1 pint white or orange shellac varnish. This should be applied with a brush and rubbed in by wrapping a cloth around a weighted floor brush, so that it becomes hard over night and does not remain sticky. Paraffine oil of pale color gravity, used in the same manner, will also clean and freshen up the floor, and in that way prolong the life of the shellac varnish.

The Don Valley Brick Works

ARE NOW MANUFACTURING

Porous Terra Cotta Fireproofing

In Arches, Blocks and Furring
in any required size

HEAD OFFICE: *36 Toronto Street, TORONTO*

MONTREAL AGENTS:
DAVID MCGILL, 206 Merchants Bank Chambers, MONTREAL

Kindly Write for Prices

V. E. ASHDOWN CO.

Limited

Importers of
**ENGLISH, FRENCH
AND GERMAN
WALL PAPERS**

We carry in stock a large assortment of

"LINCRUSTAWERKE"

a beautiful SOLID RELIEF wall covering in
the "Raw," also in highly finished colorings.

IF YOU DEALER DOES NOT CARRY IT WRITE US DIRECT

77 YORK STREET, TORONTO, CAN.

Books on Building Trades

FOR

Carpenters, Masons, Painters,
Plumbers, Cement Men, Etc.

Pocket Book on Square - Postpaid, 50c.

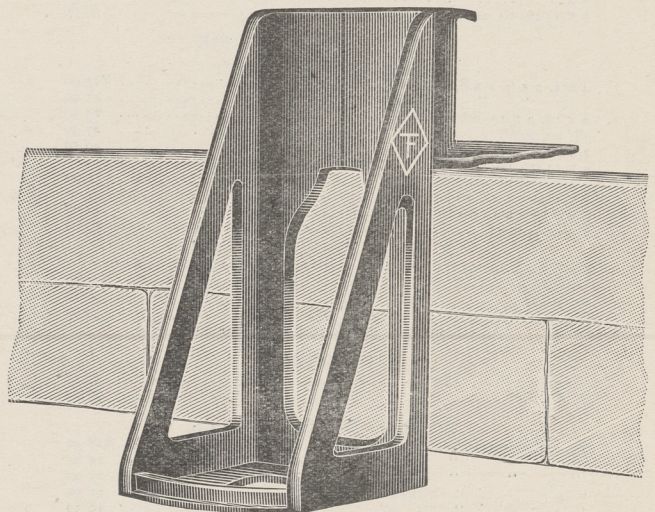
Write for List and Combination Offers

WM. C. A. STEVENSON

99 Bolton Avenue, TORONTO, Ontario

Builders' Joist Hangers

ALL SIZES AND STYLES



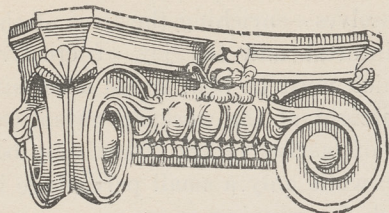
Wall Hangers, Post Caps and Bases

If you will use these Hangers and Caps
you will save money, time, labor and timber.
If you have not got a catalogue we will send
one on request.

We are the only MANUFACTURERS in CANADA of THIS LINE.

ESTIMATES FURNISHED

TAYLOR-FORBES COMPANY, Limited
GUELPH, ONTARIO



Capital for Veranda Column

Relief Decorations for Exterior and Interior Work in Staff, Fibrous Plaster. Full stock of Centre Flowers, Brackets, Capitals, Frieze, etc. Send for Catalogue.

JOHN CLAPHAM & SON
14 Main Street East, HAMILTON, ONT.

ART GLASS WORKS

ESTABLISHED 1876.

Memorial Church Windows,
Geometrical and Quarrie Windows,
Art Glass for Residences, etc.
Send for designs and prices to

H. HORWOOD & SONS

400 and 402 Bank Street, OTTAWA
Ogdensburg, N. Y.

W. B. SNIDER, President. H. W. ANTHES, Manager and Sec.-Treas.
W. W. SNIDER, Vice-President.

TORONTO FOUNDRY CO., Limited
Manufacturers of

Soil Pipe and Fittings, Boiler Stands,
Sinks, Etc.

Jefferson and Pardee Avenues,
and Liberty street, **Toronto**

GOOD STOCK

needs good lighting. The ideal light should light the goods and not be seen while doing so.

THE FRINK REFLECTOR

fills every requirement for perfect window lighting.

I. P. FRINK, 551 PEARL ST., NEW YORK

Samson Spot Cord



Distinguished by the trade-mark the COLORED SPOT Warranted to be of Pure Cotton. Smooth Finish and Perfect Braid. Samples Free.

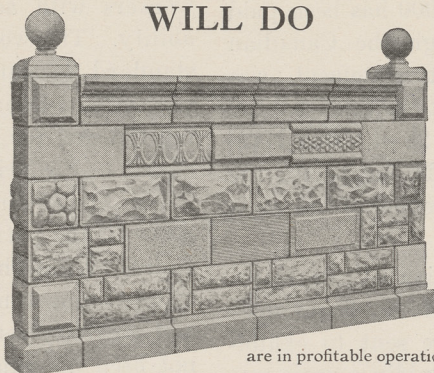
Carried in Stock by

THE VOKES HARDWARE CO., LIMITED,
TORONTO, ONT.

THE JAMES WALKER HARDWARE CO., LIMITED,
MONTREAL, QUE.

BEAMSVILLE BRICK & TERRA-COTTA CO.
SPECIALTY
A Peerless Pressed Brick of all forms and Colors required **RED BROWN-BUFF**
VITRIFIED PAVING BRICK
Prompt Delivery **HEAD OFFICE & WORKS**
BEAMSVILLE, ONT.
GEORGE CRAIN, Proprietor

WHAT THE "IDEAL" FACE DOWN MACHINE WILL DO



There is absolutely no limit to the artistic possibilities of the Ideal Concrete Block Machine. Of the almost endless forms and designs of blocks that a single machine can produce, samples of a few are shown in cut. The "Ideal" is the only FACE DOWN Concrete Block Machine in the world with practically unlimited adaptability as to size (within capacity) shape, and design of block.

In addition to the only perfect Concrete Block Machine we have the most complete line of cement machinery in the world, Brick Machines, Mixers, Sil and Lintel Machines, Column, Spindle, Ball and other Ornamental Moulds. More than 3,000

IDEAL FACE DOWN Interchangeable Concrete Machines

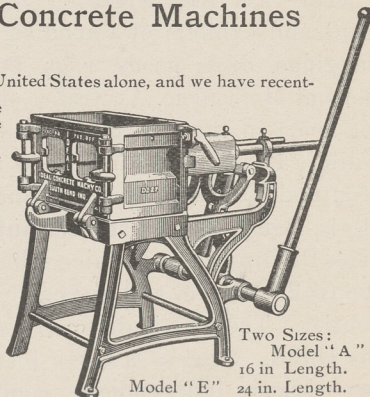
are in profitable operation in the United States alone, and we have recent-

ly closed the largest single contract for block machines in the history of the cement industry. Within a period of 30 days we have made heavy shipments to Calcutta, Shanghai, Sydney, Khartoum, Valparaiso, Mexico, Glasgow, Budapest, Bucharest and Panama. Six carloads went to a single foreign country. Our catalogue, magnificently illustrated, contains information of vital importance to Architects—Contractors—Builders and those who manufacture Concrete Stone. Sent FRFE on application.

IDEAL CONCRETE MACHINERY CO.
Limited

213 King St., London, Ontario, Canada.

Canadian Sales Agents: Mussels, Limited
MONTREAL TORONTO WINNIPEG VANCOUVER



Two Sizes:
Model "A" 16 in. Length.
Model "E" 24 in. Length.

CUTLER MAILING SYSTEM

Arrangements have been made to manufacture in the Dominion under the Cutler patents.

Owing to the saving in duty, the new Cutler Mail Chute, Model C, with its entire front in the form of doors, can now be installed at a less rate than was formerly paid for the older form of chute.

For full information and tenders, address

THE CUTLER MFG. CO., ROCHESTER, N. Y.

WILLIAM FRY SCOTT

STRUCTURAL ENGINEER

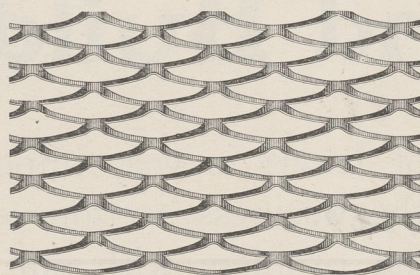
Consultation or Design: Buildings, Building Construction: Foundations, Walls, Roofs, Bridges, Masonry, Fireproofing, Reinforced Concrete, Reinforced Brick, Steel, Timber, Specifications, Examinations, Valuations, and Reports for Investment.

Aberdeen Chambers, Cor. Adelaide and Victoria Sts., TORONTO, ONT.

Main 4724

Main 6307

"GALT" Expanded Steel Lath



Strong, Economical,
Rigid, Uniform
Flat, Durable

See this Lath before buying elsewhere.

Once used, always used.

Samples and full particulars mailed free upon request.

The Galt Art Metal Co.
LIMITED - GALT, Ont.

or Dunn Bros., Winnipeg, Man.
and Regina, Sask.



"GALVADUCT" and "LORICATED"

Conduits

For Interior Construction

Conduits Company Limited

Sole Manufacturers under Canadian
and U.S. Letters Patent

Toronto - Canada

CANADIAN HANDICRAFTS.

"In the past three years almost \$14,000 has been paid to workers in home industries through the Canadian Handicrafts Guild." This significant statement was made by the president, Miss Phillips, at the third annual meeting of the Guild, held on January 28 at "Our Handicrafts Shop," Montreal. Mrs. W. D. Lighthall, the recording secretary, gave an excellent report of the work of 1907.

There has been a gratifying extension of the movement and exhibits of Canadian handicrafts, home spun hangings, dress goods, rugs, etc., were sent to exhibitions at Melbourne, Australia, and at Dublin a room was set apart in the Canadian Pavilion for the work of the Guild. Other exhibitions were held in the Art Gallery, Montreal, Toronto, Boston, Sherbrooke, North Hatley, Metis, Banff, Ottawa and Lachute, with excellent results. Miss Phillips gave an interesting resume of the work of the Guild, its aim and object, practical methods and difficulties. The aim is distinctly not commercial gain for the Guild. Success is taken to mean increased sales for the workers, independence, comfort and content of the individual, and the consequent well-being of the community and country at large.

In olden times a "Guild" meant people banded together to promote some special craft. The Handicrafts Guild is composed of men and women desirous of preserving and promoting the handicrafts of Canada without

financial profit to themselves—enriching the lives of the workers with added interest and the joy of creative ability. The work, which must be kept up to a certain standard, is bought outright at the workers' valuation, subject to a knowledge of market values, commission being charged for selling, while only a small percentage is added to the price paid, for running expenses.

Sir Alexander Lacoste gave an address in which he spoke of the patriotism of the work accomplished by the Guild. While there had been in the past century a marvellous improvement in machinery and resulting wealth and comfort, yet the development of manufactures had not been an unmixed blessing. The Guild, apart from the financial benefit to the homeworkers, is a patriotic factor in preserving the home life of the country.

Following is the committee elected for the ensuing year: Hon. President, Lord Strathcona; hon. vice-president, Sir Melbourn Tait; Miss Phillips, Miss Peck, Mrs. Dinham Molson, Mrs. Lightball, Lady Kingston, Lady Tait, Mrs. John Savage, Mrs. Chaffee, Mrs. Armstrong, Mrs. Botford, Miss Robertson, Judge Sicotte, Dr. J. C. Cameron, Messrs. W. S. Maxwell, R. Forget, Hibert, Dunford, Lightball and Phillips.

HAVE BUILDERS' EXCHANGE FOR OTTAWA.

The formation of a Builders' Exchange for Ottawa has been decided upon, and the details of the organization scheme are at present under discussion.

A Word to Architects and Builders

THE problem of LIGHT is very important in planning a building in the business section of Cities and Towns. We have solved the problem with our

LUXFER PRISMS

For Sidewalk Areas and Windows

LUXFER PRISM CO., Limited

100 King Street West,

TORONTO, ONT.

Write for Circular
and Prices.

FRANK DARLING.

J. A. PEARSON

DARLING & PEARSON

Architects,

Members of the Ontario Association of Architects.

Imperial Bank Building, Leader Lane - TORONTO

EDMUND BURKE & J. C. B. HORWOOD**ARCHITECTS**

Union Loan Building, Toronto St., TORONTO

GEO. M. MILLER & CO.**ARCHITECTS**

Toronto General Trusts Building - TORONTO

POWER & SON,*Architects and Building Surveyors,*

Merchants Bank Chambers,

KINGSTON, - ONTARIO

TAYLOR, HOGLE & DAVIS,
(Taylor & Gordon)**ARCHITECTS**

North British & Mercantile Chambers,

80 St. Francois Xavier St., - MONTREAL

Telephone Main 2817.

HUTCHISON & WOOD,*Architects and Valuers,*

Royal Insurance Building - MONTREAL

Telephone Main 858.

GEO. A. ROSS, A.R.I.B.A. D. H. MACFARLANE
ROSS & MACFARLANE,**ARCHITECTS**51 Bank of Ottawa Building, 224 St. James Street
MONTREAL

Telephone Main 227.

E. F. DARTNELL.

Fine Building Stones. Fine Pressed and Enamelled Bricks, etc.

Telephone 2382. 180 St. James Street.

JAS. W. PYKE & CO.Importers Structural Material—Iron and Steel
Telephone 312. Merchants Bank Bldg.**D. NICHOLSON & CO.,** Roofers, 679 St. Paul
St., Montreal. Gravel Roofing a Specialty

Repairs of all kinds promptly attended to.

Bell Telephone 1665

T. A. Morrison & Co.

10 Mechanics' Building, MONTREAL

Telephone Main 4532

Milton Pressed Brick, Red and Buff, American Enamelled Bricks, "Roman" Manufactured Building Stone and Terra Cotta, Sandstones, Lime Stones, Concrete Stones, Macadam Stones, Roofing Gravel, Contractors' Plant, Stone Crushers, Etc.

Dealers and Fixers of
**English and American
Enamelled Tile
Glazed En. Tile
Ceramic and
Roman
Venetian
Marble
Mosaics****Mantels
in Faience
and Tile
Fireplaces**Phone 6136 Main
Albert Street
TORONTO**H.M. Robinson & Co.****FREDERIC HOLMES, Contractor**Telephone North 663. 1111 Yonge St., TORONTO.
Estimates given for Cut Stone, Brickwork, Etc.**GEORGE RATHBONE,** 2 Northcote Ave. Pine
Hemlock and Hardwood Lumber; Sash, Doors,
Blinds and Mouldings, Pine and Hardwood Floor
ing, Veneered Doors, Panel Work, Office Fittings
Etc.**GEORGE OAKLEY & SON**
Dealers in Cut Stone278 Booth Ave. TORONTO.
Telephone Main 4468.**Ontario Lime Association**

Manufacturers and Dealers in

**Grey Lime, Guelph White Lime,
Ontario Cement, Portland Cements
Plaster Paris, Hair, Fire Brick,
Fire Clay, Sewer Pipe, etc.**

Telephone 920. 118 Esplanade St. E., Toronto

ROBT. RENNIE & SON,

Terra Cotta Tile,

SLATE AND GRAVEL ROOFERS, &c.Every description of Roofing Slate always on hand.
Galvanized Iron Ridges, Valleys and Flashings
supplied.

Telephone 2344. 378 Berkeley St., TORONTO.

H. WILLIAMS & CO.,

23 Toronto St. TORONTO.

ROOFERSWith Slate, Felt and Gravel; also Williams' Flat Slate
Roof—the best. We lay ROCK ASPHALT on cellar
bottoms, floors and walks—the best material for this
work. Telephone No. 511.**G. DUTHIE & SONS,***Terra Cotta Tile, Slate and Felt Roofs,*

Cor. Widmer and Adelaide Sts., - TORONTO.

GALVANIZED IRON FURNISHINGS SUPPLIED.

Telephone 1936.

ESTABLISHED 1856

Slate and Felt Roofing.

FORBES ROOFING CO. 91 Spadina St.

DOUGLAS BROS.**SLATE, TILE AND METAL ROOFERS.**

Sheet Metal Work, Metallic Ceilings, Skylights, etc.

124 Adelaide Street West, TORONTO.

Telephone Main 360.

PIONEER GALVANIZED IRON WORKS

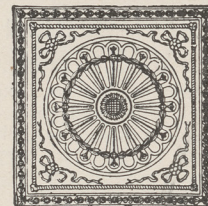
ESTABLISHED 1855.

GEORGE RINGHAM

23 and 25 Edward Street, TORONTO

Copper and Galvanized Iron Cornices,
Skylights, Etc., Metal Ceilings

Felt and Slate Roofing, Phone Main 2572.

**Going to
Re-Decorate?**Why not enjoy the practical advantages
offered by our**Metallic
Ceilings & Walls**

They are both handsome and economical—outlast any other style of interior finish—are fire proof and sanitary—can be applied over plaster if necessary—and are made in a vast number of artistic designs which will suit any room of any building.

Write us—we'd like you to know all about them. If you want an estimate send outline showing the shape and measurements of your ceilings and walls.

Metallic Roofing Co. Limited
TORONTO.**ADAMSON & WICKS**
Modellers and Designers**ARCHITECTURAL CARVERS**in Stone, Marble, Alabaster
and Wood

921 Yonge Street - TORONTO

WILLIAM J. HYNES

16 Gould Street, Toronto

Relief decorations for exterior and interior work in Staff, Fibrous Plaster, Cement, etc. A full stock of Centre Flowers, Brackets, Capitals, Friezes, Cornices, etc., etc., always on hand. Modeling executed to Architects' details or instructions. Sketches and designs submitted for decorative effects. Write for illustrations and prices. Telephone Main 1609.

**Do You Desire To Interest
Manufacturers?**

If you want to sell anything to the manufacturers of Canada it would be good policy to talk to them direct. To do so to best advantage you should advertise in

**CANADIAN MACHINERY AND
MANUFACTURING NEWS**Montreal Toronto Winnipeg
Sample copies and rates on application

SHINGLE STAINSFINEST IN THE MARKET
SAMPLES FOR THE ASKING**JAMES LANCMUIR & CO.**
Limited

1340-46 Bathurst Street, TORONTO

The Roofers' Supply Co.
LIMITED

WHOLESALE AND RETAIL DEALERS IN

ALL KINDS OF ROOFING MATERIALSlate, Roofing Felt, Roofing Pitch, Terra Cotta
Tiles, Galvanized Iron, Sheet Copper, Slate Nails,
&c., &c., &c.

Foot of Bay St. - TORONTO

**CHAMBERLIN
METAL WEATHER STRIP**A permanent fixture, excludes
draughts, dust and soot. Dis-
places storm sash. 50% cheaper**CHAMBERLIN METAL WEATHER
STRIP COMPANY, Limited**

Phone Main 4319 319 Yonge St., TORONTO

ESTABLISHED 1849.

BRADSTREET'S

Capital and Surplus, \$1,500,000.

Offices Throughout the Civilized
World.

Executive Offices:

Nos. 346 and 348 Broadway, NEW YORK CITY U.S.A.

THE BRADSTREET COMPANY gathers information that reflects the financial condition and the controlling circumstances of every seeker of mercantile credit. Its business may be defined as of the merchants, by the merchants, for the merchants. In procuring, verifying and promulgating information no effort is spared, and no reasonable expense considered too great, that the results may justify its claim as an authority on all matters affecting commercial affairs and mercantile credit. Its offices and connections have been steadily extended, and it furnishes information concerning mercantile persons throughout the civilized world.

Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns, and by responsible and worthy financial, judiciary and business corporations. Specific terms may be obtained by addressing the company or any of its offices. Correspondence invited.

THE BRADSTREET COMPANY.

OFFICES IN CANADA: Halifax, N.S.; Hamilton, Ont.; London, Ont.; Montreal, Que.; Ottawa, Ont.; Quebec, Que.; St. John, N.B.; Toronto, Ont.; Vancouver, B.C.; Winnipeg, Man.; Calgary, Alta.

THOS. C. IRVING,

Gen. Man. Western Canada, Toronto.

**THE CANADIAN
OFFICE & SCHOOL
FURNITURE CO. LIMITED**

**PRESTON
ONTARIO**



**MANUFACTURERS
OF HIGH GRADE BANK & OFFICE
FIXTURES; SCHOOL LIBRARY &
COMMERCIAL FURNITURE, OPERA
& ASSEMBLY CHAIRS & INTERIOR
HARDWOOD FINISH GENERALLY.**

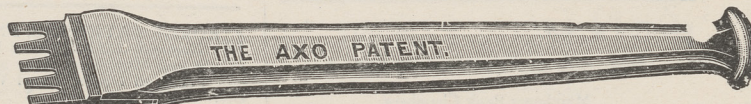
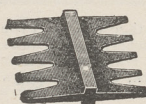
The Globe Furniture Co., Limited

MANUFACTURERS OF

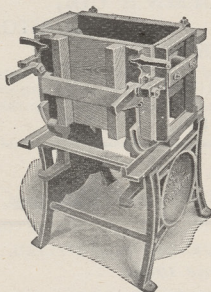
OFFICE FITTINGS

Church and School Furniture

WALKERVILLE, ONTARIO

AXO**Stone-Working**This Tool does away with the constant forging of solid tools,
as each cutter can be instantly replaced when worn out.
SAVES TIME AND MONEY**TOOLS****FOR FREESTONE AND MARBLE**

Send for full description and price list

THE BAILEY-UNDERWOOD CO., LIMITED, NEW GLASGOW, N. S.**BRIDGE
GIRDER****PAINT****ONLY THE BEST MATERIALS****THE CANADA PAINT CO. LTD.**
MONTREAL, TORONTO, WINNIPEG.**London Concrete Block Machine**

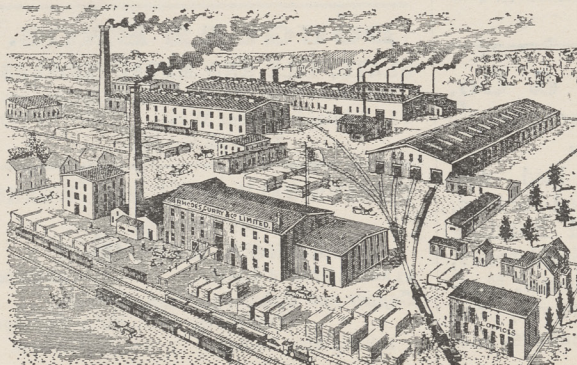
Beats everything in competition. FACE-DOWN, COMBINED AND ADJUSTABLE, Many Machines in one. The only Face-down machine allowing the use of crushed stone in the block. All sizes of blocks made on the one width of pallet. Makes every size and design of block.

SEND FOR CATALOG NO. 1.

London Concrete Machinery Company,

28 Redan St., London, Ont.

Largest Exclusive Concrete Machinery Company in Canada.

RHODES, CURRY & COMPANY, LIMITED**BANK AND OFFICE FITTINGS
SCHOOL DESKS A SPECIALTY**

We manufacture all kinds of building materials, including cast iron columns, cresting, sash weights, etc.

In addition to our large stock of native lumber we are now carrying about one million feet of foreign lumber, including oak, walnut, ebony, whitewood, basswood, red cedar, douglas fir, mahogany, &c.

RHODES, CURRY & CO.**Amherst, N. S.**

BRANCH AT

HALIFAX

SYDNEY

Esco Products

PENETRATE—DO NOT FILM

"Esco" water-proofs and damp-proofs cement, concrete, plaster, brick and stone surfaces interior and exterior. One coat makes concrete impervious to moisture. Cement blocks coated with "Esco" will be made absolutely waterproof. "Esco" applied to the interior of brick walls prevents dampness penetrating the building. For waterproofing foundations, tunnels, cellars, etc., it has no equal.

"Esco" Steel Coating, the greatest preservative for iron, wood or steel.

LOCAL AGENTS WANTED.

FOR CIRCULARS AND OTHER PARTICULARS, APPLY TO

EADIE-DOUGLAS CO., 40 Hospital St., MONTREAL

The Canadian Bridge Co., Limited

MANUFACTURERS OF

Walkerville, Ontario

STEEL BUILDINGS, ROOF TRUSSES

Railway and Highway Bridges and Structural Steel and Iron Work of all descriptions. Estimates furnished upon application.

Hot Blast Heating Systems

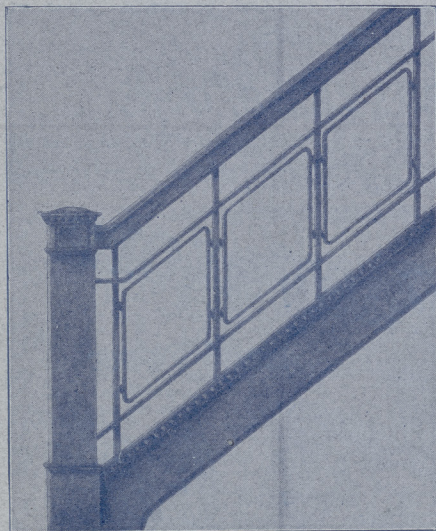
FOR

Schools, Colleges, Hospitals, Factories, and
Public Buildings

Using Exhaust Steam or High or Low Pressure Live Steam. Plans and specifications submitted. Steam Specialties, Fans, Blowers and Exhausters of all kinds. Engines for High or Low Pressure Steam. Particulars furnished on application to

SHELDONS, Limited

GALT, Ont.



CANADIAN ORNAMENTAL IRON CO.

JOSEPH LEA
GEORGE T. LEA
E. J. LEA

OFFICE
35 Yonge Street Arcade
TORONTO
Phone Main 4562

MANUFACTURERS OF THE

Modern Method Stair

DESIGNERS AND WORKERS IN

IRON, BRONZE, and BRASS

Complete Equipment for any sized Building.

*"Queen's Head"
and "Fleur de Lis"*

GALVANIZED IRON

ALWAYS THE SAME UNIFORM QUALITY
EVERY SHEET GUARANTEED

John Lysaght, Ltd., Makers,
BRISTOL, ENG.

A. C. Leslie & Co., Ltd., Montreal
CANADIAN MANAGERS

Contractors to Home and Colonial Governments

ALLAN, WHYTE & COMPANY
CLYDE PATENT ROPERY, RUTHERGLEN, GLASGOW, SCOTLAND

WIRE ROPES

Flexible and Specially Flexible, for All Purposes

Agents: **DRUMMOND, McCALL & CO.,**
WHO CARRY LARGE STOCKS

Canada Life Bldg., MONTREAL
86 Front St., TORONTO

Vulcan Portland Cement

Daily Capacity, 2500 Barrels



Will be ready for shipment about January 1st. Our location, accessible to three railroads and the St. Lawrence River, gives excellent shipping facilities and ensures against car shortage in times of famines, embargoes, etc.

William G. Hartranft Cement Company
Sole Selling Agent

Room 55, Bank of Ottawa Bldg., MONTREAL
Real Estate Trust Bldg., PHILADELPHIA.

Birch Flooring

Veneer Flooring

Send for Catalogue and Samples

The KNIGHT BROS CO.

LIMITED

BURKS FALLS, ONT.

WILLIAM
Steam
Elevators

Electric
Hydraulic
MALLOCH & CO.
Electric Dumb Waiters
LONDON, ONT.

Elevators
Hand Power
& CO.